



An Evaluation of Biological Inventory Data Collected at Cumberland Gap National Historical Park

Vertebrate and Vascular Plant Inventories

Natural Resource Report NPS/CUPN/NRR—2010/182



ON THE COVER

Clockwise beginning top left: eastern small-footed Myotis (*Myotis leibii*), green salamander (*Aneides aeneus*), deciduous forest, banded sculpin (*Cottus Carolinae*), and black bear (*Ursus americanus*). Photos courtesy of NPS cooperators (Copperhead Environmental Consulting, Inc., NatureServe, and Third Rock Consultants, LLC).

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Abstract

An important function of the National Park Service (NPS) is protecting and maintaining the biological diversity found within parks. In an effort to assist parks in documenting vascular plants and vertebrates, the NPS Inventory and Monitoring Program (I&M) provided funding and technical assistance through its 32 I&M Networks. Cumberland Gap National Historical Park (CUGA) is within the Cumberland Piedmont Network (CUPN). In cooperation with CUGA, CUPN compiled existing information on vertebrates and vascular plants (i.e., species lists with related attribute and spatial data) and initiated additional field investigations in an effort to document at least 90% of the species of vertebrates (amphibians, birds, fish, mammals and reptiles) and vascular plants believed to occur on CUGA. All data were entered and certified in NPSpecies, the NPS master database for documenting species status.

A total of 1,212 organisms were categorized as Present in Park (i.e., occurrence in park is documented) on CUGA's Local List, with an additional 36 categorized as Probably Present (very high confidence of occurrence in park but undocumented). Based on the numbers in these two categories, 97% of CUGA's vertebrates and vascular plants are documented. While this percentage is not exact (i.e., it will vary as additional information is gained), it is apparent that substantial gains have been made in documenting vertebrates and vascular plants on CUGA. However, this is not to imply that additional efforts are unlikely to document additional organisms. Potential priorities for follow-up inventory efforts are noted within this report, including the need for inventories to be conducted within the newly acquired Fern Lake watershed. Inventory results are also briefly discussed within the context of long-term monitoring and management.

With 33 ecological community types and over 1,000 organisms documented within its borders, CUGA supports a wide diversity of common and rare organisms. The blackside dace (*Phoxinus cumberlandensis*) and Indiana bat (*Myotis sodalis*) are the only federally listed species known to occur on the park. But, 134 organisms categorized as Present in Park are state listed, federally listed and/or listed as critically imperiled or imperiled (S1, S2, G1, or G2) by NatureServe. Park managers face a number of challenges in their efforts to conserve these resources, not the least of which is aggressive exotic plants. A total of 122 exotic vascular plants are currently known to occur on CUGA. Additional threats include forest pests and climate change. CUPN's long-term monitoring efforts will be focused on providing information on these and other threats to park managers.

Introduction

As part of the National Park Service's (NPS) effort to "improve park management through greater reliance on scientific knowledge," a primary role of the Inventory and Monitoring (I&M) Program is to collect, organize, and make available natural resource data and to contribute to the Service's institutional knowledge by facilitating the transformation of data into information through analysis, synthesis, and modeling. In pursuit of that endeavor, the I&M Program's Cumberland Piedmont Network (CUPN) recently completed multiple efforts to inventory the vertebrate species and vascular plants at Cumberland Gap National Historical Park (CUGA). These efforts included cataloging all existing data, followed by additional field investigations. The primary goal of these efforts was to document 90% of the vertebrate and vascular plant species occurring in the park. This report provides a summary of results. Results are also briefly discussed within the context of future inventory efforts, long-term monitoring, management, and climate change.

A natural resource **inventory** is an extensive point-in-time effort to determine location or condition of a resource, including the presence, class, distribution, and status of plants, animals, and abiotic components such as water, soils, landforms, and climate.

Monitoring differs from inventory in adding the dimension of time, and the general purpose of monitoring is to detect changes or trends in a resource.

Methods

Prior to the initiation of any field investigation, an effort was made to assemble extant data on species occurrence at CUGA. This included searches of reference databases and vouchers, as well as a site visit to the park (Nichols et al. 2000). Based on the limited findings, inventories for vertebrate and vascular plant groups at CUGA were determined to be incomplete or lacking. As such, inventories of birds (Monroe 2005), fish (Remley 2005), mammals (Gumbert et al. 2006), amphibians and reptiles (Meade 2003), and vascular plants (White 2006) were conducted on the park.

NPSpecies is the National Park Service's master database for documenting the occurrence and status of species in more than 270 national park units containing significant natural resources. Data gathered from the initial reviews at CUGA and recent inventories were organized and entered in NPSpecies. Organism names were linked to the available evidence (reference, observation and/or voucher), quality checked, and made ready for a review by individuals with expertise in the various taxa groups. The purpose of these reviews was to assign a park status (e.g., Present in Park, Probably Present, False Report) and complete a series of checklist fields for each organism (i.e., abundance, residency, nativity, and cultivation). Upon completion of this step, data were considered certified and uploaded to a master, online version of NPSpecies (<https://science1.nature.nps.gov/npspecies/web/main/start>), which is currently restricted to NPS users and contractors. In an effort to improve user functionality, the Natural Resource Program Center is working on an initiative to integrate and streamline information management tools for natural resources within the NPS. This initiative is referred to as IRMA (Integration of Resource

Recent inventory reports for CUGA are available on the CUPN Intranet website <http://www1.nrintra.nps.gov/im/units/CUPN/>

Management Applications), and NPSpecies is the first large application to be converted. A prototype portal for IRMA is now accessible at <http://nrinfo.nps.gov/Home.mvc>. From this portal NPS users can navigate to obtain certified species lists, as well as search for available documents. Although limited in scope, this prototype represents a framework for future steps. The full compliment of data will be accessible to parks in a streamlined and more user friendly environment in the near future, with protections in place for records flagged as sensitive.

Results

Searches for past data and completion of recent inventory efforts resulted in a total of 18 references, 492 vouchers, and 6,103 observations entered in NPSpecies for CUGA (Table 1). These totals include five observations for fungi and non-vascular plants. However, both fungi and non-vascular plants were not included in recent certification efforts for CUGA and are not addressed within this report.

Table 1. Count of vouchers and observations in NPSpecies by taxa category for Cumberland Gap National Historical Park (NPSpecies 8/19/2009).

Category	# Vouchers	# Observations
Bird	0	912
Fish	29	26
Mammal	223	78
Amphibian	22	44
Reptile	20	17
Vascular Plant	198	5,021
<i>Other (fungi & non-vascular plants)</i> ¹	0	5
Total	492	6,103

¹ Fifty-six additional fungi and non-vascular plants have been entered into NPSpecies (Walker et al. 2007). However, these groups have not been certified and are not included within the scope of this report.

In some instances, taxa on CUGA's local list have only been identified to the species level, such as the white-tailed deer (e.g., *Odocoileus virginianus*). While in other instances, they have been identified to the subspecies or variety level, such as the cloudland deer mouse (*Peromyscus maniculatus nubiterrae*). Therefore, the term organism (as opposed to species) is generically used throughout this report to refer to unique taxa at the species level or below.

Individuals involved in the certification of a park's data primarily placed organisms in one of three Park Status categories. In instances where reviewers had extremely high confidence that an organism existed in the park due to recent verifiable evidence (i.e., recent report, voucher, and/or observation) then that organism was classified as Present in Park. In instances where current verifiable evidence was lacking, but reviewers had extremely high confidence that an organism occurred in the park, then it was categorized as Probably Present. In instances where an organism name existed in NPSpecies, but current verifiable evidence was lacking, and a reviewer did not have a high level of confidence that it occurred on the park, then it was categorized as Unconfirmed. Detailed definitions of these and the remaining Park Status categories can be found in Appendix A.

Based on a review of the assembled evidence, 1,248 vertebrate and vascular plant organisms were categorized as Present in Park or Probably Present (Table 2). An additional 707 organisms were categorized as Unconfirmed. In addition to the categories of Present in Park, Probably Present, and Unconfirmed, nine organisms were classified as Encroaching (documented adjacent to the park with potential to occur in the park), Historic (documented historically but recent investigations indicate is now probably absent), or False Report (report believed to be in error).

Table 2. Count of vascular plants and vertebrate organisms on CUGA's Local List by Park Status categories (Total=1,964) (NPSpecies 8/19/2009).

Park Status ¹	Bird	Fish	Mammal	Amphibian	Reptile	Vascular Plant	Total
Present in Park	142	25	40	23	12	970	1,212
Probably Present	14	4	9	3	4	2	36
Unconfirmed	1	60	11	2	3	630	707
Encroaching	2		2				4
Historic	3						3
False Report		1		1			2

¹Refer to Appendix A for definitions of Park Status categories.

Currently, 62% (1,212) of the 1,964 organisms on CUGA's Local List are documented via substantive reference, observation and/or voucher, leading reviewers to make a determination of Present in Park during the recent certification process. At first glance, one might conclude that CUGA is well below the I&M goal of documenting 90% of the organisms occurring on the park. However, 62% is based on *ALL* organisms currently on CUGA's Local List, including those classified as Unconfirmed. Organisms received an Unconfirmed status based on *weak or no evidence*, giving minimal indication of the species' occurrence in the park (refer to Appendix A for more information). When the Local List is pared down to those organisms with a Park Status of Present in Park or Probably Present (i.e., those organisms known or believed to be in the park), the percentage of documented organisms rises to 97%. This percentage exceeds the I&M goal of documenting 90% of the organisms occurring on the park.

Reviewers assigned general abundance categories (e.g., common, rare, etc) to two categories – birds and mammals (Table 3). Reviewers did not attempt to estimate abundance for fish, amphibians, reptiles, or vascular plants, during the certification process.

Residency values (e.g., breeder, migrant, resident, etc.) were assigned for all documented vertebrates with the exception of 45 birds and two bats. The inability to assign a residency value to these organisms was due to the fact that it was unclear if they bred on the park (i.e., breeder) or fell within another residency category.

CUGA's local list includes 242 non-native organisms (12% of total). Of these, 126 are currently known to occur in the park (i.e., Present in Park), two are classified as Probably Present, and two more are classified as Encroaching (Table 4). As expected, the majority of these non-native organisms are vascular plants.

Table 3. Count of bird and mammal organisms by Abundance categories on CUGA with a Park Status of Present in Park (NPSpecies 8/19/2009).

Abundance Category¹	Bird	Mammal	Total
Abundant	1		1
Common	52	16	68
Uncommon	40	14	54
Rare	37	10	47
Occasional	9		9
Unknown	3		3

¹ Refer to Appendix A for definitions of Abundance categories.

Six additional organisms, including the coyote (*Canis latrans*) and five sport fish are currently assigned a nativity of Unknown. This is due to the fact that there is currently some uncertainty as to whether these organisms are native to the park or are present as a result of stocking efforts either on or near the park (i.e., the fish).

Table 4. Count of Non-native organisms on CUGA’s Local List (NPSpecies 8/19/2009).

Taxa Group	Present in Park	Probably Present	Encroaching	Unconfirmed
Bird	4			
Fish				4
Mammal		2	2	1
Vascular Plant	122			107
Total	126	2	2	112

¹ Refer to Appendix A for definitions of Park Status categories.

NatureServe, in cooperation with The Nature Conservancy and NPS, developed a protocol to rank the impact of non-native invasive vascular plants (Morse et al. 2004). Through a series of standardized questions, non-native species are evaluated and assigned an Invasive Species Impact Rank (I-Rank) based on impact to native species and natural biodiversity. I-Ranks are categorized as high, medium, low, or insignificant.

Seventeen of the 122 non-native vascular plants known to occur on CUGA received an overall I-Rank score that included “High” (Table 5). However, this does not automatically mean these are the 17 most serious non-native threats to CUGA. For example a serious threat to CUGA is undoubtedly tree-of-heaven (*Ailanthus altissima*), which received a medium overall I-Rank score. One of the many other non-native plants known to occur on CUGA could also prove to be a more serious ecological or managerial threat given time to establish and the right environmental conditions. Rather, this ranking is intended to serve as a starting point for prioritization and also guard against the possibility of potentially overlooking a species simply because it may be new to the region or is unfamiliar to resource managers.

A total of 144 organisms on CUGA's Local List with a Park Status of Present in Park or Probably Present meet at least one of the following criteria:

- State listed by Kentucky State Nature Preserves Commission, Tennessee Natural Heritage Inventory Program (plants), Tennessee Wildlife Resources Agency (animals), or Virginia Department of Game and Inland Fisheries as endangered, threatened, special concern or other conservation status.
- Federally listed by the U.S. Fish and Wildlife Service per the U.S. Endangered Species Act of 1973, as amended.
- Ranked as Critically Imperiled (G1) or Imperiled (G2) at the global level by NatureServe and its network of member programs.
- Ranked as Critically Imperiled (S1) or Imperiled (S2) at the state level by NatureServe and its network of member programs.

These include five amphibians, twenty-eight birds, seven fish, fourteen mammals, and ninety vascular plants (Table 6). Ten of these organisms are considered Probably Present. The remaining 134 are categorized as Present in Park.

Table 5. Non-native plants, occurring on CUGA, with an Invasive Species Impact Rank (I-Rank) containing "High".

Preferred Common Name	Scientific Name	Overall I-Rank	Ecological Impact ¹	Management Difficulty ²	Comments
Japanese barberry	<i>Berberis thunbergii</i>	High/ Medium	High/ Medium	Insignificant	A serious problem in New England where it can form thick stands that eliminate all native understory plants. Invades disturbed sites, as well as high quality habitats
musk thistle	<i>Carduus nutans</i>	High/ Low	Medium/ Insignificant	High/ Medium	Persistent annual or biennial of open areas, including areas of disturbance in dense woods. Prolific seed production and seeds that remain viable for up to 15 years, ensure control and management programs will extend over the long-term.
oriental bittersweet	<i>Celastrus orbiculata</i>	High/ Medium	Medium/ Low	Medium	Reduces system-wide light levels and alters community structure and composition by overtopping existing vegetation and shading lower layers.
common crown- vetch	<i>Coronilla varia</i>	High	High	Low	This perennial herb is a nitrogen-fixer, alters the fuel loads in fire-adapted ecosystems, creates dense monospecific stands by strongly out competing native plants, and impacts high-quality occurrences of common and rare native plant communities in the US.
Chinese yam	<i>Dioscorea oppositifolia</i>	High/ Low	Medium/ Low	Medium/ Insignificant	Alters community structure and composition by overtopping existing vegetation layers and shading species in lower layers.
	<i>Elaeagnus umbellata</i>	High	High	Low	Reported to alter ecosystem processes by fixing nitrogen in the soil. It also alters community structure and composition by creating dense thickets and shading other species.
Chinese privet	<i>Ligustrum sinense</i>	High/ Medium	Medium	Low	Alters community structure and composition by creating a dense shrub layer that shades plant species in lower layers.
tall fescue	<i>Lolium arundinaceum</i>	High/ Medium	Medium	High/ Medium	Threatens several natural communities, including fens, prairies, and woodlands. Usually infected with a fungal endophyte making it allelopathic, inhibiting other plants from growing and is poisonous to animals including soil organisms.
Japanese honeysuckle	<i>Lonicera japonica</i>	High/ Medium	Medium	High/ Medium	Can have extremely negative consequences for forest communities and forest structure. Few effective control methods known.
amur honeysuckle	<i>Lonicera maackii</i>	High	High/ Medium	Medium	Thickets of this species exhibit significant canopy disturbance reducing species richness and abundance and inhibiting native tree seedlings.

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Table 5. Non-native plants, occurring on CUGA, with an Invasive Species Impact Rank (I-Rank) containing “High” (continued).

Preferred Common Name	Scientific Name	Overall I-Rank	Ecological Impact ¹	Management Difficulty ²	Comments
Nepalese browntop	<i>Microstegium vimineum</i>	High/ Medium	Medium	High/ Medium	Slow to invade undisturbed vegetation but spreads quickly and forms dense monocultures in disturbed areas. It can displace native vegetation in a few years and also impacts ground nesting birds.
English plantain	<i>Plantago lanceolata</i>	High/ Low	High/ Low	High/ Low	Rapidly colonizes open areas and forms dense swards that crowd out native vegetation and prevent establishment of native species. Seeds remain viable for 10 years.
Canada bluegrass	<i>Poa compressa</i>	High/ Low	Medium/ Low	High/ Low	Seems to require disturbance to establish. However, it also occurs in communities of conservation. Apparently, it has more impacts in the northern portion of its range.
Japanese knotweed	<i>Polygonum cuspidatum</i>	High/ Medium	High/ Medium	Medium	Extremely competitive and aggressive invader of significant riparian and wetland habitats, as well as lower-quality sites. Infestations can replace native species and degrade aquatic habitat. Once established, control can be labor intensive.
sulphur cinquefoil	<i>Potentilla recta</i>	High/ Medium	High/Low	Medium/Low	Very competitive in native grasslands and can become dominant in forest habitats where tree cover is reduced. One of the most serious wildland invaders in northern Rockies.
common pear	<i>Pyrus communis</i>	High /Low	High/ Low	Unknown	This species doesn't seem to be an aggressive invader in most of its range. However since this species is widely cultivated, its spread should be monitored.
johnsongrass	<i>Sorghum halepense</i>	High/ Medium	Medium/ Low	High/ Medium	Massive size and rapid growth of rhizomes creates difficulties for establishment of other species. One of the most frequently listed noxious weeds in U.S., it is self-pollinated and aggressive.

¹ A subcategory of Overall I-Rank score that addresses organism's negative impacts on native plant and animal populations and communities.

² A subcategory of Overall I-Rank score that addresses difficulty of control.

Table 6. Organisms on CUGA's Local List with a park status of Present in Park or Probably Present, which are state listed, federally listed, and/or possess a state rank of S1 or S2.

Category	Scientific Name	Common Name	State Status ¹ , State Rank ² and Federal Status ³	Global Rank ⁴	Park Status ⁵
Amphibian	<i>Desmognathus walteri</i>	Black Mountain salamander	TN=D	G4	Present in Park
Amphibian	<i>Gyrinophilus porphyriticus duryi</i>	Kentucky spring salamander	VA=S2	T4	Present in Park
Amphibian	<i>Hemidactylium scutatum</i>	four-toed salamander	TN=D	G5	Present in Park
Amphibian	<i>Plethodon kentucki</i>	Cumberland Plateau salamander	TN=S2	G4	Present in Park
Amphibian	<i>Plethodon richmondi</i>	southern ravine salamander	TN=S2	G5	Present in Park
Bird	<i>Accipiter striatus</i>	Sharp-shinned Hawk	KY=S, S3B,S4N; TN=D, S3B	G5	Present in Park
Bird	<i>Aegolius acadicus</i>	Northern Saw-whet Owl	TN=T, S1; VA=SC, S1B,S1N	G5	Probably Present
Bird	<i>Aquila chrysaetos</i>	Golden Eagle	TN=T, S1	G5	Probably Present
Bird	<i>Carpodacus purpureus</i>	Purple Finch	VA=SC, S1B,S5N	G5	Present in Park
Bird	<i>Catharus guttatus</i>	Hermit Thrush	VA=SC, S1B,S5N	G5	Present in Park
Bird	<i>Certhia americana</i>	Brown Creeper	KY=E, S1B,S4N; VA=SC, S3B,S5N	G5	Present in Park
Bird	<i>Circus cyaneus</i>	Northern Harrier	KY=T, S1B,S4N; TN=D, S4N; VA=SC, S1B,S3N	G5	Present in Park
Bird	<i>Contopus cooperi</i>	Olive-sided Flycatcher	TN=D, S1	G4	Present in Park
Bird	<i>Corvus corax</i>	Common Raven	KY=T, S1; TN=T, S2	G5	Present in Park
Bird	<i>Dendroica cerulea</i>	Cerulean Warbler	TN=D, S3B	G4	Present in Park
Bird	<i>Dendroica fusca</i>	Blackburnian Warbler	KY=T, S1B	G5	Present in Park
Bird	<i>Dendroica magnolia</i>	Magnolia Warbler	VA=SC, S2B	G5	Present in Park
Bird	<i>Empidonax flaviventris</i>	Yellow-bellied Flycatcher	VA=SC, S1B	G5	Probably Present
Bird	<i>Empidonax minimus</i>	Least Flycatcher	KY=E, S1B	G5	Present in Park
Bird	<i>Falco peregrinus</i>	Peregrine Falcon	KY=E, S1B; TN=E, S1N; VA=ST, S1B,S2N	G4	Present in Park
Bird	<i>Haliaeetus leucocephalus</i>	Bald Eagle	KY=T, S2B,S2N; TN=D; VA=ST, S2B,S3N	G5	Present in Park
Bird	<i>Junco hyemalis</i>	Dark-eyed Junco	KY=S, S2B,S5N	G5	Present in Park

Table 6. Organisms on CUGA's Local List with a park status of Present in Park or Probably Present, which are state listed, federally listed, and/or possess a state rank of S1 or S2 (continued).

Category	Scientific Name	Common Name	State Status ¹ , State Rank ² and Federal Status ³	Global Rank ⁴	Park Status ⁵
Bird	<i>Limnothlypis swainsonii</i>	Swainson's Warbler	TN=D; VA=SC, S2B	G4	Present in Park
Bird	<i>Oporornis philadelphia</i>	Mourning Warbler	VA=SC, S1B	G5	Probably Present
Bird	<i>Pandion haliaetus</i>	Osprey	KY=T, S2B	G5	Present in Park
Bird	<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	KY=S, S3B	G5	Present in Park
Bird	<i>Regulus satrapa</i>	Golden-crowned Kinglet	VA=SC, S2B,S5N	G5	Present in Park
Bird	<i>Sitta canadensis</i>	Red-breasted Nuthatch	KY=E, S1B; VA=SC, S2B,S4N	G5	Present in Park
Bird	<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker	TN=D, S1B,S4N	G5	Present in Park
Bird	<i>Troglodytes troglodytes</i>	Winter Wren	VA=SC, S2B,S4N	G5	Present in Park
Bird	<i>Vermivora chrysoptera</i>	Golden-winged Warbler	KY=T, S2B; TN=D, S3B; VA=SC, S3B	G4	Present in Park
Bird	<i>Vireo olivaceus</i>	Red-eyed Vireo	VA=SC, S5	G5	Present in Park
Bird	<i>Wilsonia canadensis</i>	Canada Warbler	KY=S, S3B	G5	Present in Park
Fish	<i>Ammocrypta clara</i>	western sand darter	KY=E, S1; TN=T, S1; VA=ST, S1	G3	Probably Present
Fish	<i>Etheostoma caeruleum</i>	rainbow darter	VA=S2	G5	Present in Park
Fish	<i>Etheostoma sagitta</i>	arrow darter	TN=D, S2	G3	Present in Park
Fish	<i>Notropis buccatus</i>	silverjaw minnow	TN=T, S1	G5	Present in Park
Fish	<i>Notropis rubellus</i>	rosyface shiner	TN=D, S2	G5	Present in Park
Fish	<i>Percina aurantiaca</i>	tangerine darter	TN=D; VA=S2	G4	Probably Present
Fish	<i>Phoxinus cumberlandensis</i>	blackside dace	KY=T, S2; TN=T, S2S1; USFWS=T	G2	Present in Park
Mammal	<i>Corynorhinus rafinesquii</i>	Rafinesque's big-eared bat	KY=S; TN=D; VA=LE, S2	G3	Probably Present
Mammal	<i>Myotis grisescens</i>	gray bat	KY=T, S2; TN=E, S2; VA=LE, S1; USFWS=E	G3	Probably Present
Mammal	<i>Myotis leibii</i>	eastern small-footed bat	KY=T, S2; TN=D, S2S1	G3	Present in Park
Mammal	<i>Myotis sodalis</i>	Indiana bat	KY=E, S1; TN=E, S1; VA=LE, S1; USFWS=E	G2	Present in Park
Mammal	<i>Napaeozapus insignis</i>	woodland jumping mouse	TN=D, S4	G5	Present in Park

Table 6. Organisms on CUGA's Local List with a park status of Present in Park or Probably Present, which are state listed, federally listed, and/or possess a state rank of S1 or S2 (continued).

Category	Scientific Name	Common Name	State Status ¹ , State Rank ² and Federal Status ³	Global Rank ⁴	Park Status ⁵
Mammal	<i>Neotoma magister</i>	Allegheny woodrat	TN=D	G3	Present in Park
Mammal	<i>Parascalops breweri</i>	hairy-tailed mole	TN=D	G5	Present in Park
Mammal	<i>Sorex cinereus</i>	masked shrew	KY=S; TN=D	G5	Present in Park
Mammal	<i>Sorex dispar</i>	long-tailed shrew	KY=N (<i>S. d. blitchi</i> =E) , S1; TN=D, S2	G4	Probably Present
Mammal	<i>Sorex fumeus</i>	smoky shrew	TN=D	G5	Present in Park
Mammal	<i>Sorex hoyi</i>	pygmy shrew	TN=S2	G5	Present in Park
Mammal	<i>Spilogale putorius</i>	eastern spotted skunk	KY=S, S2	G5	Present in Park
Mammal	<i>Synaptomys cooperi</i>	southern bog lemming	TN=D, S4	G5	Present in Park
Mammal	<i>Ursus americanus</i>	black bear	KY=S, S2	G5	Present in Park
Vascular Plant	<i>Adlumia fungosa</i>	climbing fumitory	KY=E, S1; TN=T, S2	G4	Present in Park
Vascular Plant	<i>Agrimonia gryposepala</i>	tall hairy groovebur	KY=T, S1	G5	Present in Park
Vascular Plant	<i>Allium tricoccum</i>	wild leek	TN=S-CE, S1	G5	Present in Park
Vascular Plant	<i>Amianthium muscivomicum</i>	fly-poison	KY=T, S1	G4	Present in Park
Vascular Plant	<i>Aralia nudicaulis</i>	wild sarsaparilla	KY=E	G5	Present in Park
Vascular Plant	<i>Boykinia aconitifolia</i>	brook saxifrage	KY=T, S2	G4	Present in Park
Vascular Plant	<i>Calamagrostis porteri</i>	Porter's reedgrass	KY=N, S2; TN=E, S1	G4	Present in Park
Vascular Plant	<i>Calamagrostis porteri</i> ssp. <i>porteri</i>	Porter's reedgrass	KY=T, S2	T4	Present in Park
Vascular Plant	<i>Cardamine rotundifolia</i>	round-leaf water cress	TN=S, S2	G4	Present in Park
Vascular Plant	<i>Carex appalachica</i>	Appalachian sedge	KY=T, S2; TN=S1	G4	Present in Park
Vascular Plant	<i>Carex austrocaroliniana</i>	tarheel sedge	KY=S; TN=S2	G4	Present in Park
Vascular Plant	<i>Carex interior</i>	inland sedge	VA=S1	G5	Present in Park
Vascular Plant	<i>Carex purpurifera</i>	purple sedge	VA=S2	G4	Present in Park
Vascular Plant	<i>Carex radiata</i>	stellate sedge	KY=N, S2	G4	Present in Park

Table 6. Organisms on CUGA's Local List with a park status of Present in Park or Probably Present, which are state listed, federally listed, and/or possess a state rank of S1 or S2 (continued).

Category	Scientific Name	Common Name	State Status ¹ , State Rank ² and Federal Status ³	Global Rank ⁴	Park Status ⁵
Vascular Plant	<i>Castanea dentata</i>	American chestnut	KY=E, S1; TN=S, S2	G4	Present in Park
Vascular Plant	<i>Castanea pumila</i>	Allegheny chinkapin	KY=T, S2	G5	Present in Park
Vascular Plant	<i>Castanea pumila</i> var. <i>pumila</i>	Allegheny chinkapin	KY=S1	T5	Present in Park
Vascular Plant	<i>Cheilanthes alabamensis</i>	Alabama lipfern	KY=H, SHS1	G4	Present in Park
Vascular Plant	<i>Clematis catesbyana</i>	satincurls	KY=H, SHS1	G4	Present in Park
Vascular Plant	<i>Cocculus carolinus</i>	Carolina coralbead	VA=S1	G5	Present in Park
Vascular Plant	<i>Convallaria majuscula</i>	convallaria	KY=E, S1	G4	Present in Park
Vascular Plant	<i>Corydalis sempervirens</i>	pale corydalis	KY=S; TN=E, S1	G4	Present in Park
Vascular Plant	<i>Crataegus calpodendron</i>	pear hawthorn	VA=S1	G5	Present in Park
Vascular Plant	<i>Cypripedium acaule</i>	pink lady's-slipper	TN=S-CE, S4	G5	Present in Park
Vascular Plant	<i>Cypripedium parviflorum</i>	small yellow lady's-slipper	KY=T, S2	G5	Present in Park
Vascular Plant	<i>Deschampsia flexuosa</i>	wavy hairgrass	KY=T, S2	G5	Present in Park
Vascular Plant	<i>Desmodium cuspidatum</i>	largebract ticktrefoil	VA=S2	G5	Present in Park
Vascular Plant	<i>Desmodium strictum</i>	pinebarren ticktrefoil	VA=S2	G4	Present in Park
Vascular Plant	<i>Elymus canadensis</i>	nodding wild-rye	VA=S2	G5	Present in Park
Vascular Plant	<i>Eriophorum virginicum</i>	tawny cottongrass	KY=E, S1; TN=E, S1	G5	Present in Park
Vascular Plant	<i>Eryngium yuccifolium</i>	rattlesnake-master	VA=S2	G5	Present in Park
Vascular Plant	<i>Eupatorium incarnatum</i>		VA=S2	G5	Present in Park
Vascular Plant	<i>Eupatorium steelei</i>	Steele's eupatorium	KY=T, S2	G4	Present in Park
Vascular Plant	<i>Euphorbia mercurialina</i>	mercury spurge	KY=T, S1	G4	Present in Park
Vascular Plant	<i>Eurybia surculosa</i>		VA=S1	G4	Present in Park
Vascular Plant	<i>Gentiana decora</i>	showy gentian	KY=S	G4	Present in Park
Vascular Plant	<i>Hexastylis contracta</i>	mountain heartleaf	KY=E, S1	G3	Present in Park

Table 6. Organisms on CUGA's Local List with a park status of Present in Park or Probably Present, which are state listed, federally listed, and/or possess a state rank of S1 or S2 (continued).

Category	Scientific Name	Common Name	State Status ¹ , State Rank ² and Federal Status ³	Global Rank ⁴	Park Status ⁵
Vascular Plant	<i>Hieracium scabrum</i>	rough hawkweed	TN=T, S2	G5	Present in Park
Vascular Plant	<i>Houstonia canadensis</i>	Canadian summer bluet	VA=S2	G4	Present in Park
Vascular Plant	<i>Huperzia porophila</i>	rock clubmoss	VA=S1	G4	Present in Park
Vascular Plant	<i>Hydrastis canadensis</i>	golden-seal	TN=S-CE	G4	Present in Park
Vascular Plant	<i>Hydrophyllum virginianum</i>	Shawnee salad	KY=T, S2; TN=T	G5	Present in Park
Vascular Plant	<i>Juglans cinerea</i>	butternut	KY=S, S3; TN=T	G4	Present in Park
Vascular Plant	<i>Juncus subcaudatus</i>	woods-rush	KY=N, S1	G5	Present in Park
Vascular Plant	<i>Lathyrus venosus</i>	smooth veiny peavine	KY=S, S2	G5	Present in Park
Vascular Plant	<i>Lilium canadense</i>	Canada lily	TN=T, S3	G5	Present in Park
Vascular Plant	<i>Listera smallii</i>	kidney-leaf twayblade	KY=T, S2	G4	Probably Present
Vascular Plant	<i>Lonicera dioica</i>	limber honeysuckle	TN=S, S2	G5	Present in Park
Vascular Plant	<i>Lycopodium clavatum</i>	running clubmoss	KY=E, S1	G5	Present in Park
Vascular Plant	<i>Lysimachia tonsa</i>	southern loosestrife	TN=S2	G4	Present in Park
Vascular Plant	<i>Magnolia macrophylla</i>	bignone magnolia	VA=S1	G5	Present in Park
Vascular Plant	<i>Maianthemum canadense</i>	false lily-of-the-valley	KY=T, S2	G5	Present in Park
Vascular Plant	<i>Melampyrum lineare</i>	American cow-wheat	KY=N, S2	G5	Present in Park
Vascular Plant	<i>Melampyrum lineare var. latifolium</i>	American cowwheat	KY=T, S2	T5	Present in Park
Vascular Plant	<i>Melanthium parviflorum</i>	small-flowered false hellebore	KY=E, S1	G4	Present in Park
Vascular Plant	<i>Minuartia glabra</i>	Appalachian sandwort	KY=T, S1	G4	Present in Park
Vascular Plant	<i>Minuartia groenlandica</i>	Appalachian sandwort	TN=E, S1S1	G5	Present in Park
Vascular Plant	<i>Oclemena acuminata</i>	whorled wood aster	KY=T, S2	G5	Present in Park
Vascular Plant	<i>Oligoneuron rigidum var. rigidum</i>		VA=S2	T5	Present in Park

Table 6. Organisms on CUGA's Local List with a park status of Present in Park or Probably Present, which are state listed, federally listed, and/or possess a state rank of S1 or S2 (continued).

Category	Scientific Name	Common Name	State Status ¹ , State Rank ² and Federal Status ³	Global Rank ⁴	Park Status ⁵
Vascular Plant	<i>Panax quinquefolius</i>	American ginseng	TN=S-CE; VA=ST	G3	Present in Park
Vascular Plant	<i>Paronychia argyrocoma</i>	silvery nailwort	KY=E, S1; TN=T, S1	G4	Present in Park
Vascular Plant	<i>Penstemon calycosus</i>	longsepal beardtongue	VA=S1	G5	Present in Park
Vascular Plant	<i>Phlox amplifolia</i>	large-leaved phlox	VA=S2	G4	Present in Park
Vascular Plant	<i>Polygonatum biflorum var. commutatum</i>		TN=S2	T5	Present in Park
Vascular Plant	<i>Polygonum arifolium</i>	halberd-leaf tearthumb	TN=T, S1	G5	Present in Park
Vascular Plant	<i>Prosartes maculata</i>		KY=S	G3	Present in Park
Vascular Plant	<i>Ranunculus allegheniensis</i>	Allegheny mountain buttercup	TN=S1	G4	Present in Park
Vascular Plant	<i>Rhododendron catawbiense</i>	catawba rhododendron	KY=N, S2	G5	Present in Park
Vascular Plant	<i>Rhododendron minus</i>	Carolina rhododendron	TN=S2	G4	Present in Park
Vascular Plant	<i>Robinia hispida var. rosea</i>	bristly locust	KY=N, S2	T3	Present in Park
Vascular Plant	<i>Rosa setigera</i>	prairie rose	VA=S1	G5	Present in Park
Vascular Plant	<i>Rosa virginiana</i>	Virginia rose	TN=S, SH	G5	Present in Park
Vascular Plant	<i>Rubus canadensis</i>	smooth blackberry	KY=E, S1	G5	Present in Park
Vascular Plant	<i>Ruellia purshiana</i>	pursh's wild-petunia	TN=S, S1	G3	Present in Park
Vascular Plant	<i>Salvia urticifolia</i>	nettle-leaf sage	KY=E, S1	G5	Present in Park
Vascular Plant	<i>Saxifraga michauxii</i>	michaux's saxifrage	KY=T, S2	G4	Present in Park
Vascular Plant	<i>Scutellaria incana</i>	hoary skullcap	VA=S2	G5	Present in Park
Vascular Plant	<i>Silene ovata</i>	ovate catchfly	KY=E, S1; TN=E, S2S1	G3	Present in Park
Vascular Plant	<i>Silene rotundifolia</i>	roundleaf catchfly	VA=S2	G4	Present in Park
Vascular Plant	<i>Silphium terebinthinaceum</i>	prairie rosinweed	TN=S2S1	G4	Present in Park
Vascular Plant	<i>Sisyrinchium albidum</i>	white blue-eyed grass	VA=S2	G5	Present in Park
Vascular Plant	<i>Smilax ecirrata</i>	upright carrionflower	VA=S1	G5	Present in Park

Table 6. Organisms on CUGA’s Local List with a park status of Present in Park or Probably Present, which are state listed, federally listed, and/or possess a state rank of S1 or S2 (continued).

Category	Scientific Name	Common Name	State Status ¹ , State Rank ² and Federal Status ³	Global Rank ⁴	Park Status ⁵
Vascular Plant	<i>Solidago curtisii</i>		KY=T, S2	G4	Present in Park
Vascular Plant	<i>Solidago roanensis</i>	roan mountain goldenrod	KY=T, S1	G4	Present in Park
Vascular Plant	<i>Streptopus lanceolatus</i> <i>var. roseus</i>	twistedstalk	TN=S1	T4	Present in Park
Vascular Plant	<i>Symphyotrichum laeve</i>	smooth blue aster	KY=N, S2	G5	Present in Park
Vascular Plant	<i>Trillium undulatum</i>	painted trillium	KY=T, S2	G5	Present in Park
Vascular Plant	<i>Vaccinium erythrocarpum</i>	southern mountain cranberry	KY=E, S1	G5	Present in Park
Vascular Plant	<i>Vitis labrusca</i>	fox grape	KY=S, S2	G5	Present in Park
Vascular Plant	<i>Woodsia appalachiana</i>	Appalachian cliff fern	KY=H, SH; TN=S, S1	G4	Present in Park

¹ Data obtained from NatureServe (June 5, 2008). The official endangerment status or level of legal protection the state has assigned to this species.

KY - E=A taxon in danger of extirpation and/or extinction throughout all or a significant part of its range in Kentucky. T=A taxon likely to become endangered within the foreseeable future throughout all or a significant part of its range in Kentucky. S=A taxon that should be monitored due to various concerns related to it’s continued viability. N=None.

TN - E=Endangered (plants and animals) Any species or subspecies whose prospects of survival or recruitment within the state are in jeopardy or are likely to become so within the foreseeable future. T=Threatened (plants and animals) - Any species or subspecies that is likely to become an endangered species within the foreseeable future. S=Special Concern (plants) - Any species or subspecies of plant that is uncommon in Tennessee, or has unique or highly specific habitat requirements or scientific value and therefore requires careful monitoring of its status.

D=Deemed in need of management (nongame animals). This category is analogous to “Special Concern.” CE= Commercially Exploited.

VA - SE=state endangered (protected). ST= state threatened (protected). SC= special concern (animals on a non-regulatory list).

² Data obtained from NatureServe (June 5, 2008). The rounded NatureServe conservation status, developed by NatureServe and its network of member (state) programs, of a species from a state/province perspective, characterizing the relative imperilment of the species. S1=Critically Imperiled, S2=Imperiled, S3=Vulnerable, S4=Apparently Secure, S5=Secure, B=Breeding population, N=Non-breeding population, SNR=State Conservation Status not yet assessed. Refer to <<http://www.natureserve.org/explorer/nsranks.htm>> for additional information on ranks.

³ Data obtained from NatureServe (June 5, 2008). U.S. Endangered Species Act: Current status of the taxon as designated or proposed by the U.S. Fish and Wildlife Service (USFWS) or the U.S. National Marine Fisheries Service, and as reported in the U.S. Federal Register in accordance with the U.S. Endangered Species Act of 1973, as amended.

⁴ Data obtained from NatureServe (June 5, 2008). The rounded NatureServe conservation status, developed by NatureServe and its network of member programs, of a species from a global (i.e., rangewide) perspective, characterizing the relative imperilment of the species. G1=Critically Imperiled, G2=Imperiled, G3=Vulnerable, G4=Apparently Secure, G5=Secure. Refer to <<http://www.natureserve.org/explorer/ranking.htm>> for additional information on ranks.

⁵ Refer to the Appendix for definitions of Park Status categories.

As can be seen from these results CUGA boasts significant biological diversity, which compares favorably with other CUPN parks. As an example, CUGA ranks highest amongst CUPN parks with regard to its list of confirmed and probable (i.e., Present in Park and Probably Present) mammals (Table 7). However, a park's value in regard to protecting and maintaining biological diversity cannot be measured purely by the numbers. Another key attribute is its ability to support rare or unique species. The previous table (Table 6) certainly implies CUGA is doing well in this regard as well.

Table 7. Number of organisms designated as Present in Park or Probably Present in Cumberland Piedmont Network Parks (NPSpecies 2008).

Park	Bird	Fish	Mammal	Amphib.	Reptile	Vascular Plants	TOTALS	Park Size (ac.)
ABLI	131	10	37	16	21	567	782	341
CARL	102	15	34	21	22	605	799	264
CHCH	175	19	46	23	22	966	1,251	8,178
COWP	96	7	19	23	32	554	731	842
CUGA	156	29	49	26	16	968	1,244	20,437
FODO	177	13	29	21	29	785	1,054	558
GUCO	76	14	19	19	27	413	568	220
KIMO	122	19	28	22	34	686	911	3,945
LIRI	147	40	33	28	28	994	1,270	13,691
MACA	167	79	48	28	33	1,269	1,624	52,809
NISI	149	22	22	21	39	440	693	988
RUCA	130	5	25	17	14	542	733	309
SHIL	186	51	43	26	28	809	1,143	3,969
STRI	152	46	27	13	21	633	892	709

¹ Refer to Appendix C for a graphical representation of these data.

Discussion

Much of the CUGA's biological diversity is attributable to the 33 ecological community types, ranging from bogs to dry-mesic forests to mountain balds (White 2006). Although much of the vegetation is second and third growth forest, some of these areas have not been disturbed for over 100 years (White 2006). In addition, many rare communities also occur on CUGA. From a zoological standpoint, the quality habitats along the ridgeline combined with the natural 'funneling action' of the Cumberland Mountains results in a substantial number of migrant songbirds and raptors, alike. On a single fall day, Monroe (2005) reported observing 17 different species of warblers in addition to many other migrants. Many regionally significant and rare avian species were also observed during the breeding season (Monroe 2005). This includes species in Kentucky whose breeding records are confined to this portion of the state (Palmer-Ball 1996).

When considering all this diversity, the obvious question of how thorough or complete recent field efforts were at documenting organisms that exist on CUGA arises. Based on counts of the number of documented organisms (i.e. Present in Park) and those believed to be present (i.e., Probably Present), CUGA's percentage of documented organisms currently stands at 97%, which obviously exceeds the I&M goal of documenting 90% of the organisms occurring in the park. However, as already noted, this percentage drops below 65% if those organisms currently classified as Unconfirmed are included in this calculation.

Considering the sheer number of vascular plants on CUGA's Local List (82% of the total), it is not surprising vascular plants comprise the majority of Unconfirmed organisms. However, the only data source for nearly all of the Unconfirmed vascular plants is county level distribution maps obtained from the Biota of North America Program (BONAP). This means that while verifiable evidence for an organism may be available for the county or region, there is no direct evidence of its occurrence on the park. While one cannot unequivocally assume all these Unconfirmed organisms do not occur on CUGA, the fact that multiple plant inventories have been conducted by highly competent investigators, and these organisms were not detected certainly raises some doubt. NatureServe utilized multiple estimates to evaluate the thoroughness of vascular plant inventory efforts finding that the number of species already documented exceeded three of the four estimates. In other words, results indicated that over 100% of the species had been documented, which is obviously impossible. Their final conclusion, based on the first-order jackknife estimate, was that somewhere between 95 – 100% had been documented. As a result, it is doubtful whether additional inventory efforts would suddenly find many of these Unconfirmed organisms. However, this is not to imply that additional organisms are unexpected. CUGA is a very diverse and remote park, and as additional botanical efforts occur it is anticipated some additional organisms will be verified, and additional locations of rare plants will also be confirmed. But, based on the results of efforts to date, it seems unlikely an additional 600+ organisms will be documented. Currently there are 630 vascular plants categorized as Unconfirmed on CUGA's Local List (Table 2).

Another category with a much smaller number but high percentage of Unconfirmed records is fish. More than half of the fish currently on CUGA's Local List are Unconfirmed. This is because Remley (2005) included several species "unlikely to be present" but were "collected in

reasonable proximity to Cumberland Gap.” Thus, Remley (2005) sought to be as thorough as possible, while recognizing many of the species would likely not occur on the park (similar to BONAP records).

In short, while there are a large number of Unconfirmed organisms currently on CUGA’s Local List, it would be incorrect to assume that CUGA’s list of documented organisms is woefully incomplete. To the contrary, based on current evidence it is likely that many (most?) of the organisms classified as Unconfirmed do not occur on the park. I&M guidance states that if “reasonable efforts” to obtain current, verifiable evidence for those organisms in the Unconfirmed category are unsuccessful, then the Park Status should be changed to Historic, Encroaching or False Report as applicable.

An important step in this process would also be to “re-review” existing park records and reports. Nichols et al. (2000) reviewed several documents, etc. existing at that time. However, based on a very limited review of existing CUGA files and discussions with staff ((NPS, Jenny Beeler, CUGA Resource Mgt. Specialist, pers. comm.) it would appear several past project reports and data, providing information on species presence and distribution, may have been overlooked.

Future Inventory Efforts

While acknowledging the thoroughness of inventory efforts, it is still anticipated that additional organisms will be documented on CUGA. As an example, bear-huckleberry (*Gaylussacia ursina*) a new park record and state record for Kentucky has recently been reported for CUGA (NatureServe, Milo Pyne, Botanist, pers. comm., 8/3/2009). Once all the information and evidence are collected this will add an additional organism to CUGA’s Local List. However, based on NatureServe’s assessment, it is not anticipated there will be a significant number of vascular plants added in the future. This is largely true for vertebrates, as well. But, based on a review of recent inventories, there appears to be some areas, and in some cases specific taxa, where follow-up efforts may prove successful and useful to park management.

Gumbert et al (2006) added seven organisms that were previously undocumented on CUGA. They also believed additional organisms may be present on the park, but noted “the initial list of 60 species covers any mammal potentially found on the property and includes those that are rare, cryptic, or introduced exotics. Obviously the “rare and cryptic” can be difficult to document. However, this includes several species that may be important to management. Examples include the long-tailed shrew (*Sorex dispar*) (S1 in KY, *S. d. blitchi* state endangered; S2 in TN) and water shrew (*Sorex palustris*) (S2 in TN; S1, state endangered in VA). Gumbert et al (2006) noted ideal habitats for these shrews were trapped unsuccessfully. However, also noting inherent limitations in a comprehensive mammal survey, they believed “a more focused and dedicated effort in specific habitats may be needed.” For instance, they noted the Rafinesque’s big-eared bat (*Corynorhinus rafinesquii*) (S3, state sensitive in KY; S3 in TN; and S2 state endangered in VA) has never been documented on CUGA though “habitat requirements seem to be met for this species.” While an additional, full-scale mammal inventory is not warranted, focused opportunistic efforts to document these and other species that may be deemed important to management would certainly seem appropriate.

The southeastern region of the United States has the richest herpetofaunal (amphibians + reptiles) biodiversity on the continent (Gibbons 1997), and the Cumberland Plateau with its unique microclimates and habitats is no exception. This can be seen in the fact that CUGA's list of confirmed and probable (Present in Park and Probably Present) list is near the top in regard to number of amphibians. However, it is among the lowest in regard to reptiles. At first glance, this may seem illogical, but this discrepancy is somewhat explained by the fact that only one species of turtle, the box turtle (*Terrapene carolina*), was documented on CUGA. By contrast, Ninety Six National Historic Site, an NPS unit of less than 1,000 acres had six turtles documented during recent inventory efforts.

Meade (2003) indicated that hoop traps (i.e., aquatic turtle traps) were utilized during inventory efforts. However, there was no indication within the reports as to the intensity of its use or the number of locations. While habitat for aquatic turtles may be limited on CUGA as compared to other parks within CUPN, it seems unlikely there would be no aquatic or semi-aquatic turtles present on CUGA. As an example, Barbour et al. (1979) described the common musk turtle (*Sternotherus odoratus*) as common in Yellow Creek.

While turtle trapping can be labor intensive and requires specialized equipment, a more focused less labor intensive approach would be to conduct basking surveys in potential sites. If basking turtles are observed and cannot be positively identified, this effort could be followed up with trapping efforts. However, not all turtles regularly bask, therefore some focused trapping may still prove successful. Yellow Creek and the beaver ponds on Davis Branch are some potential locations for follow up efforts.

Seven additional amphibians and reptiles are currently categorized as Probably Present, meaning "very high confidence" the organism occurs in the park. Overall, amphibians can be extremely difficult to inventory, in some cases, taking years, even decades, to document the occurrence and/or distribution of some (Gibbons 1997). While this is not necessarily the case for these seven, it is not surprising some were potentially missed during the recent 12-month inventory (Meade 2003). Given the right season and environmental conditions, opportunistic surveys for these organisms should be attempted.

The largest number of organisms in the Probably Present category belongs to birds. The majority of these, such as the Golden Eagle (*Aquila chrysaetos*), Rough-legged Hawk (*Buteo lagopus*), Wilson's Warbler (*Wilsonia pusilla*), Connecticut Warbler (*Oporornis agilis*), and Yellow-bellied Flycatcher (*Empidonax flaviventris*) should be considered uncommon to rare migrants though regularly occurring on/over the park during appropriate season.

The Northern Saw-whet Owl (*Aegolius acadicus*) is a potentially noteworthy exception to this list. Monroe (2005) believed this rare and secretive species (no breeding records in KY, S1 and state threatened in TN; S1 and special concern in VA) could potentially be present year round in some remote rhododendron thickets within the park. Opportunistic playbacks would seem the most appropriate means of documenting this extremely secretive species within the park.

Another group where additional organisms could potentially be documented on the park is fish (the one remaining vertebrate group not already mentioned in this section). Remley (2005)

collected five species categorized as “possibly present” prior to survey efforts, in addition to one species the greenside darter (*Etheostoma blennioides*) that was considered unlikely to be present. When combined with other fish studies, it is believed the park has a solid picture of its fish fauna. However, as already noted, a number of organisms are currently categorized as Unconfirmed. Expertise on the local fish fauna surrounding CUGA was lacking during the recent certification of CUGA’s NPSpecies files. Therefore, a future need is to have this list reviewed prior to making a determination if follow up inventory efforts are warranted.

All discussions of inventories thus far have been based on the park minus its newest addition – the 4,000+ acre Fern Lake watershed. This addition was accomplished in several phases with the first 1,850 acres being completed in the spring of 2008. An additional phase including 1,268 acres was completed in January 2009, and a third phase of 905 acres was completed in the spring of 2009. Currently the lake and approximately 600 acres remain in the watershed and the park is working with a willing seller. These are significant acquisitions that were completed and thus not included in this round of vascular plant and vertebrate inventories (Meade 2003, Monroe 2005, Remley 2005, Gumbert et al. 2006, White 2006). While much of this land base is likely similar to the diversity found in portions of the remainder of the park, considering the collective size of this addition alone, makes it a priority for future systematic inventory efforts.

In regard to follow-up, opportunistic vertebrate inventory efforts, CUPN has staff knowledgeable in techniques for many of these taxa and some limited assistance could be made available to the park as needed and as opportunities arise. Fish are one exception where expertise is lacking amongst CUPN staff.

Monitoring

The CUPN Vital Signs monitoring effort currently focuses on vegetation communities, water quality, caves, landscape dynamics, ozone, invasive plants, forest pests, and climate/weather. Vascular plants are a component within many of these efforts across the Network, but vertebrates are currently only included

within CUPN’s cave monitoring efforts at MACA (i.e., woodrats and bats). It should be noted however, there is currently some discussion depending upon need and available resources to expand cave monitoring efforts to other parks within CUPN including CUGA. The stated reason for the initial low prioritization given to most vertebrates by individuals included in the vital sign ranking process was due largely to a lack of inventory data (Leibfreid et al. 2005). This limitation has been addressed in large measure by the completion of recent inventories. As a result, the question arises as to whether issues were raised during recent inventory efforts that point to a need for additional long-term monitoring efforts at CUGA that includes vertebrates.

Information on CUPN’s selected vital signs monitoring protocols can be accessed from the CUPN website at: <http://science.nature.nps.gov/im/units/cupn/>

While CUGA’s abiotic and biotic factors result in a large number of migrants occurring on the park, it also boasts an amazingly rich diversity of mature forest species including many high elevation species that are “quite rare” within the region (Monroe 2005). Some of these species, such as the Rose-breasted Grosbeak (*Pheucticus ludovicianus*) and Blackburnian Warbler (*Dendroica fusca*), are at the limit of their known geographic range (Palmer-Ball 1996).

Considering the fact that many populations of eastern migratory songbirds have shown steady declines in recent decades (Robbins et al. 1989; Franzreb and Rosenberg 1997) combined with the looming threat of climate change, species such as these on the periphery of their range warrant consideration for some monitoring. Currently, avian monitoring on CUGA is limited to a portion of a single Breeding Bird Survey route that begins near the visitor center and extends out Highway 988 through the Sugar Run area before exiting the park and continuing on Highway 217. There are currently no efforts being conducted in the high elevation areas of the park where many of the regionally rare species are known to occur. While still in development, a component of CUPN's vegetation monitoring protocol may include birds as a specialized habitat indicator (NatureServe, Rickie White, Botanist, pers. comm. 8/27/09).

Virginia Department of Game and Inland Fisheries has been conducting biennial bat hibernacula counts in two caves on the park with a focus on the park's wintering population of the federally endangered Indiana bat (*Myotis sodalis*). Considering this species declines despite numerous recovery efforts throughout its range and the impending threat of White-Nose Syndrome, these efforts should continue to be a priority.

The problem of declining amphibian populations has drawn significant attention as credible reports of decline or disappearance from many areas have been received. In 1997 the National Park Service listed amphibian declines as among its highest priority research and information needs (Dodd 2003). While biodiversity is declining worldwide, amphibians have received special attention due to (1) increases in reports of population declines and extinctions, (2) causes seem to be occurring simultaneously and over great distances, and (3) declines being reported in protected, natural areas (Collins and Storfer 2003). The latter is particularly alarming as it raises concerns that traditional methods of species conservation (i.e., habitat protection) do not appear to be effective for all species. Climate change, disease, and environmental pollution are just some of the factors that have been implicated in contributing to this global phenomenon. Monitoring the effects of climate change is a recent initiative of the Department of the Interior.

Petranka et al. (2004) began monitoring of pond breeding amphibians on CUGA and other NPS units in 1993. This effort was picked up by park staff in 2006 and the park has continued each year (NPS, Jenny Beeler, CUGA Resource Mgt. Specialist, pers. comm. 3/3/2009). Thus, the park is building a long-term dataset on pond breeding amphibians. In addition, a research project involving aquatic insects and salamanders in Shillalah, Martin's Fork and Station creeks has recently been initiated. While this project is likely short-term in nature it could provide some baseline data on the status of streamside salamanders within the park.

This may prove important, as streamside salamanders are not immune to recent reported declines as well. Bank et al. (2006) and Means and Travis (2007) reported declines and potential extirpations of dusky salamanders (genus *Desmognathus*) from areas where they were once considered common and widespread. The northern dusky salamander (*Desmognathus fuscus*) went undetected during recent inventories at Abraham Lincoln Birthplace National Historical Site (MacGregor 2007) and was found at only one location in Mammoth Cave National Park, though it was formerly considered common. This decline occurred "despite a complete lack of obvious physical changes in these habitats" (MacGregor 2007b). Thus, some level of periodic

qualitative monitoring (e.g., continued persistence, disease detection, etc), at minimum, is recommended as an early warning to potential declines.

One area worth noting in regard to monitoring of vascular plants is in the area of rare species. Kentucky State Nature Preserves Commission (KSNPC) recently re-visited Element Occurrence Records (EORs) in an effort to update its records (White and Littlefield 2008). Because state heritage programs such as KSNPC maintain extensive databases of rare organisms, coordination and data sharing with these entities should be re-visited on a periodic basis to ensure these important datasets are available to park managers.

Management

As noted within this report, significant efforts have been made to consolidate and certify available data in NPSpecies for use by park planners, managers, and others. Completion of this effort is a significant step for most CUPN parks, as it is the first time verified and validated species lists can be generated. To increase the utility of these data, a remaining step within NPSpecies is identification of management priority species, such as sensitive species, highly invasive exotics, or poached species. CUPN staff is available to assist the park in accomplishing this task. In addition, plans are currently underway by the I&M Program to make all non-sensitive data available to researchers and ultimately the general public in the near future. As such, CUGA and CUPN staff should also plan to evaluate the data for sensitive information to ensure that such data are not inadvertently released when this occurs.

While species lists, priority lists, etc. are obviously important for future park planning and management, the diversity of organisms and associated abundance also provide insight into the outcome or success of current and past management. As one looks at CUGA's current Local List a clear pattern emerges. Like Monroe (2005) stated, "The park is amazingly rich with species of mature forests." He went on to state:

Conversely, there are virtually no openings of significance within the boundaries. This makes the overall diversity of the park lower than other areas, but allows several rare species and species of special concern to thrive here. The single most telling 'find' was the detection of only a single, flyover Brown-headed Cowbird. This species, often considered one of the greatest threats to many other birds due to its parasitic nature, simply does not seem to occur unless there are disturbances within the forest.

In short, while the park's overall diversity could likely be increased by creating openings within the forest, the current management approach of protection and allowing habitats or communities to mature has resulted in significant populations of many uncommon and regionally rare species. This is reflected in vertebrate groups, as a high percentage of the expected species were found on the park. White (2006) noted:

Because the land is so unfragmented and relatively undisturbed for the past 60+ years, most all of the ecological communities within the park are considered natural community types. The nine semi-natural/disturbed types tend to occur on the edges of the park or around the human-maintained Hensley Settlement.

White (2006) went on to note that while many of the natural communities within the park are globally common, “the park probably protects some of the best high quality examples of these forests in this ecoregion.” In short, results are positive in regard to the direction and success of natural resource management at CUGA. However, as time continues new threats emerge. Some of the more noteworthy for CUGA include Hemlock Woolly Adelgid (*Adelges tsugae*), emerald ash borer (*Agrilus planipennis*), White-Nose Syndrome (bats), and a host of exotic invasive plants. At present, the emerald ash borer and White-Nose Syndrome have not been detected on CUGA, though their range is expanding toward the park.

CUGA is currently recovering from severe southern pine beetle (*Dendroctonus frontalis*) outbreaks that have significantly impacted the mature pine trees in the park (White 2006). The Hi Lewis Pitch Pine Barrens is considered extremely rare and declining on the park due to heavy damage from this native forest pest. Many of the stands once dominated by pines are being replaced by successional hardwood species. Stand replacement events such as these also open the door to potential invasion by aggressive invasive exotics. The jury is still out as to whether fire is an effective tool to slow invasion of hardwoods, allowing for pines to regenerate (White 2006).

While decisions on the best way to control the spread or impacts of forest pests can be difficult, early detection is often the manager’s best hope for success. Currently a multitude of entities from government agencies to academic institutions to NGOs have data available on the establishment and spread of a continually growing list of forest pests. To aid managers in synthesizing this information, CUPN will regularly and systematically review the available information, filter it, and provide relevant information to CUGA. This effort will be part of CUPN’s forest pest vital sign monitoring protocol (*in prep*). In addition, a component of CUPN’s vegetation community vital sign monitoring protocol (*in prep*) will incorporate some level of forest pest monitoring.

White (2006) believed aggressive exotic plants may currently be the biggest single threat to overall ecological health of the park. A total of 122 exotic vascular plants are currently known to occur on CUGA, which is comparable to most parks in CUPN. CUGA Resource Management staff has been very active in attempting to combat many of these species with periodic assistance from the NPS Southeast Exotic Plant Management Team. With many additional foreign invaders encroaching upon the region such as garlic mustard (*Alliaria petiolata*), early detection and control are the best defense. CUPN aims to assist in this endeavor through its invasive plants vital sign monitoring protocol (*in prep*).

The arrival of garlic mustard at CUGA will likely have a tremendous effect on the rich bottomland and cove forests in the park, particularly the Northern Mixed Mesophytic Forest (White 2006). As a result, the first management recommendation made by White (2006) is control of highly invasive exotics in all communities, “especially those highly ranked community types and community types near floodplains.” The Dry Calcareous Forest/Woodland (White Ash-Shagbark Hickory Type), one of the rarer community types in the park as well as being considered globally rare (G1?), is primarily threatened by exotic invasion (e.g., princess tree, *Paulownia tomentosa*; and tree-of-heaven, *Ailanthus altissima*) due to its relatively open canopy.

Other rare community types are potentially threatened by tree and shrub invasion. These include the Cumberland Streamside Bog (G1?Q), Swamp Forest-Bog Complex (Typic Type) (G2), Hi Lewis Pitch Pine Barrens (G2?), Montane Grape Opening (G2G3), and the Southern Appalachian Mountain Laurel Bald (G2G3) on deeper soil sites (White 2006). These rarer community types are prime candidates for monitoring within CUPN's vegetation community vital sign monitoring protocol (*in prep*). Once an initial stratification process is complete for this protocol, NatureServe and CUPN staff will meet with park staff to ensure park vegetation community monitoring needs (such as these) are addressed.

Additional management issues and recommendations specific to CUGA can be found in the various inventory reports, as well as White and Littlefield (2008).

Climate Change

An area of management concern, which is currently the focus of a flurry of activity and attention, is addressing climate change impacts. As already noted, the Department of Interior (DOI) has identified the response to rapid climate change a top priority, and the DOI and Congressional committees are greatly emphasizing the need to closely coordinate the response across agencies within and external to the DOI. For more information regarding this coordination refer to DOI Secretarial Order 3289, <http://www.doi.gov/climatechange/SecOrder3289.pdf>.

While monitoring effects of climate change and formulating a management response at the local level is somewhat nebulous at this juncture, much of what NPS currently does in support of its mission to manage parks "unimpaired for future generations" certainly aligns with these items. This includes:

- Preserving ecosystem services (e.g., clean and abundant water supply, clean air, pollination, critical nutrient cycling, cultural heritage, recreational services);
- Preserving biodiversity (including genetic diversity) so that species can adapt to climate change;
- Reducing other environmental stressors that interact with global warming (e.g., invasive species, habitat destruction, disease, over-fishing, pollution);
- Providing science-based information to educators, visitors, partners, and the general public.

The I&M program, and specifically CUPN, will be monitoring developments in this arena including predicted impacts. As developments occur and new information is made available, CUPN will evaluate its activities, as well as seek to keep park managers informed on this important issue.

Summary of Management Findings and Recommendations

Following is a summary of the inventory, monitoring and management items discussed within this report (Table 8). As already noted, this list was developed by CUPN staff and is based on staff knowledge and reviews of recent inventory reports and other data contained in NPSpecies for CUGA. This list should not be viewed as all inclusive or in any way usurping park management's own evaluations. It is CUPN's hope that this review document will facilitate greater use and understanding of data collected under the auspices of the I&M Program. As already noted, CUPN staff is available to provide technical assistance and in some cases limited field assistance (as appropriate and as opportunities arise) in the accomplishment of many of these tasks.

Table 8. Summary of findings/recommendations assembled by CUPN staff for CUGA, based on staff knowledge and a review of recent inventory reports and other NPSpecies data.

Category	Finding/Recommendation
Inventory	<ul style="list-style-type: none"> • Complete inventories within new land acquisitions (e.g., Fern Lake). • Cross-check existing park files for species inventory data and other relevant natural resource information with references currently linked in NPSpecies (with emphasis on vertebrates and vascular plants). Enter additional reports and observations into NatureBib and NPSpecies, as appropriate. • With the aid of taxa experts and targeted field efforts (where appropriate), review the park’s list of Unconfirmed organisms with the goal of reducing the number of organisms in this Park Status category. All groups should be addressed as opportunities arise. However, vascular plants and fish currently have the highest percentages as Unconfirmed. • Conduct targeted field efforts to document rare, sensitive, or other mammalian organisms deemed important to management. • Conduct targeted field efforts to document additional turtle species on the park. • As opportunities arise, conduct targeted efforts to document the seven amphibian and reptiles currently classified as Probably Present. • As opportunities arise, conduct targeted efforts to document the 14 birds currently classified as Probably Present. • With the aid of taxa experts knowledgeable of the local fish fauna, evaluate results of recent fish inventory efforts to determine if additional survey efforts are warranted.
Monitoring	<ul style="list-style-type: none"> • Dependent upon outcome of CUPN Vegetation Monitoring Protocol, seek opportunities to monitor high elevation breeding bird populations on the park. • Seek opportunities to conduct periodic qualitative sampling of streamside amphibian populations as an early warning to amphibian declines. • Continue efforts to update element occurrence data with state heritage programs and others. • Evaluate need and efficacy of adding cave monitoring to CUPN’s long-term monitoring efforts at CUGA. • Assess vulnerabilities to climate change and formulate appropriate monitoring and/or management response (This will be an iterative process as new information is made available).
Management	<ul style="list-style-type: none"> • Within NPSpecies, identify and flag organisms considered pest, management priority, and exploitation concern. • Within NPSpecies, identify and flag sensitive data records. • Continue efforts and seek partnerships to detect forest pests early. • Continue efforts to combat establishment and spread of invasive exotic plants. • In cooperation with CUPN and NatureServe, identify particular habitat/community types of management concern for the park.

Literature Cited

- Bank, M. S., J. B. Crocker, S. Davis, D. K. Brotherton, R. Cook, J. Behler, and B. Connery. 2006. Population decline of northern dusky salamanders at Acadia National Park, Maine, *Biological Conservation* 130:230-238.
- Barbour, R. W., W. H. Davis, and R. A. Kuehne. 1979. *The Vertebrate Fauna of Cumberland Gap National Historical Park*.
- Collins, J. P. and A. Storfer. 2003. Special Issue: Amphibian declines. *Diversity and Distributions* 9:89-98.
- Dodd, C. K. 2003. Monitoring amphibians in Great Smoky Mountains National Park, U.S. *Geological Survey Circular* 1258.
- Franzreb, K. E. and K. V. Rosenberg. 1997. Are forest songbirds declining? Status assessment from the southern Appalachians and northern forests. *Transactions of the 62nd North American Wildlife and Natural Resource Conference* 62:264-279.
- Gibbons, J. W. 1997. Discovering hidden biodiversity: Lessons from five decades of herpetological research. *Proceedings of the Seventh Symposium on the Natural History of Lower Tennessee and Cumberland River Valleys:1-7*. A. F. Scott, S. W. Hamilton, E. W. Chester and D. S. W. (Eds.). Clarksville, Tennessee.
- Gumbert, M., P. Sewell, and P. Roby. 2006. *Mammals of Cumberland Gap National Historical Park; Kentucky, Tennessee, Virginia*. Copperhead Consulting, Richmond, Kentucky.
- Leibfreid, T. R., R. L. Woodman, and S. C. Thomas. 2005. Vital signs monitoring plan for the Cumberland Piedmont Network and Mammoth Cave National Park Prototype Monitoring Program: July 2005. National Park Service, Mammoth Cave, Kentucky.
- MacGregor, J. 2007. Results of an Amphibian, Reptile, and Turtle Survey of Abraham Lincoln Birthplace and Boyhood Home National Park, Kentucky.
- MacGregor, J. 2007b. Results of an Amphibian, Reptile, and Turtle Survey of Mammoth Cave National Park, Kentucky.
- Meade, L. S. 2003. *Herpetofauna survey of Cumberland Gap National Historical Park*. Third Rock Consultants, LLC, Lexington, Kentucky.
- Means, D. B. and J. Travis. 2007. Declines in ravine-inhabiting dusky salamanders of the Southeastern US costal plain, *Southeastern Naturalist* 6:83-96.
- Monroe, M. S. 2005. *Bird inventory for Cumberland Gap National Historical Park*.

- Nichols, B., J. R. Jenkins, K. Langdon and T. Leibfreid. 2000. Study plan for vertebrate and vascular plant inventories in Cumberland Piedmont and Appalachian Highlands Networks. U.S. Department of Interior, National Park Service.
- Palmer-Ball, B. L. Jr. 1996. The Kentucky breeding bird atlas. The University of Kentucky Press, Lexington.
- Petranka, J. W., C. K. Smith and A. F. Scott. 2004. Identifying the minimal demographic unit for monitoring pond-breeding amphibians. *Ecological Application* 14:1065-1078.
- Remley, A. W. 2005. Fish inventory of Cumberland Gap National Historical Park. Third Rock Consultants, LLC, Lexington, Kentucky.
- Robbins, C. S., J. R. Sauer, R. S. Greenberg, and S. Droege. 1989. Population declines in North American birds that migrate to the neotropics. *Proceedings of the National Academy of Sciences* 86:7658-7662.
- Walker, G. L., D. Ballinger, U. Matthes and D. Dobson. 2007. Physical variables and community structure of the White Rocks cliff system, Cumberland Gap National Historic Park. Appalachian State Univ., Boone, North Carolina.
- White, D. L. and T. R. Littlefield. 2008. Update of Kentucky rare plants in Cumberland Gap National Historical Park. Kentucky State Nature Preserves Commission, Frankfort, Kentucky.
- White, R. D. 2006. Vascular plant inventory and ecological community classification for Cumberland Gap National Historical Park. NatureServe, Durham, North Carolina.

Appendix A. NPSpecies Data Dictionary

Park Status	The current status of each species in each park.	Applicable only to organisms with the <i>Local List</i> checkbox checked. The possible values reflect a combination of confidence, and availability and currency of verifiable evidence in NPSpecies.
Present in Park	Species' occurrence in park is documented and assumed to be extant.	Extremely high confidence that the species is currently in the park. A current, verifiable reference, voucher or observation is included in NPSpecies.
Probably Present	Park is within species' range and contains appropriate habitat. Documented occurrences of the species in the adjoining region of the park give reason to suspect that it probably occurs within the park. The degree of probability may vary within this category, including species that range from common to rare.	Very high confidence that the organism is currently in the park. Verifiable evidence may exist in NPSpecies, but is not considered current enough to elevate the status to Present in Park. Efforts should be made to obtain current, verifiable evidence in NPSpecies to elevate the Park Status to "Present in Park". If reasonable efforts to obtain current, verifiable evidence are unsuccessful, then the Park Status should be changed to Unconfirmed, Historic, Encroaching or False Report as applicable.
Unconfirmed	Included for the park based on weak ("unconfirmed record") or no evidence, giving minimal indication of the species' occurrence in the park.	Any confidence from very low to high that the organism is currently in the park. Verifiable evidence may exist in NPSpecies, but it is not considered sufficient enough to elevate the status to Probably Present, nor current enough to elevate the status to Present. Efforts should be made to obtain current, verifiable evidence in NPSpecies to elevate the Park Status to "Present in Park". If reasonable efforts to obtain current, verifiable evidence are unsuccessful, then the Park Status should be changed to Historic, Encroaching or False Report as applicable.
Encroaching	The species is not documented in the park, but is documented as being adjacent to the park and has potential to occur in the park.	Extremely low confidence that the organism is currently in the park, but extremely high confidence that the organism is currently adjacent to the park. Verifiable evidence may exist in NPSpecies documenting the occurrence in the park, but it is not current. Potential invasive organisms are good candidates for this Park Status designation, either before they enter a park or after they have been eliminated from a park.
Historic	Species' historical occurrence in the park is documented, but recent investigations indicate that the species is now probably absent.	Extremely low confidence that the organism is currently in the park. Verifiable evidence exists in NPSpecies, but is not current. Extinct, extirpated or eliminated species are candidates for a Historic <i>Park Status</i> designation.
False Report	Species previously reported to occur within the park, but current evidence indicates that the report was based on a misidentification, a taxonomic concept no longer accepted, or some other	Extremely low confidence that the organism is currently in the park. Evidence exists in NPSpecies, but it cannot be sufficiently verified.

NA	<p>similar problem of interpretation.</p> <p>Not Applicable - Park-Status does not apply to the scientific name for the park.</p>	<p>The NA value prevents null values from appearing in NPSpecies and applies to 2 primary situations:</p> <ol style="list-style-type: none"> 1) An outdated scientific name that is not used in the locale of the park for an organism, but is in NPSpecies for a park because of the inclusion of vouchers, observations or names linked to references. Note that outdated names are reconciled in NPSpecies with the LOCAL CLASSIFICATION system. 2) Vouchers, observations or names linked to references have not been identified at the species level or lower, but are included in NPSpecies with the name of a higher taxonomic rank than the species level. The names of these higher level taxonomic ranks will disappear from NPSpecies if the evidence of the respective name are identified to the species level or lower, and are changed appropriately in NPSpecies.
Abundance	<p>The current abundance of each organism in each park.</p>	<p>Applicable only to organisms with the <i>Local List</i> checkbox checked and a <i>Park Status</i> of "Present". The values attempt to balance abundance with suitable habitat, and temporal/behavioral considerations. In practice, the entered value should apply (although there are numerous exceptions) to the abundance in the most suitable habitat of the organism, and at the time that the organism is engaged in it's principle behavior in (e.g. breeding, migrating, hibernating, etc.), or most important behavior to, the park. A future generation of NPSpecies will address the coding of <i>Abundance</i> (and associated <i>Residency</i>) to separate out the temporal and behavioral aspects. The Data Source field for Abundance is available to provide a citation that specifically addresses abundance in more detail.</p>
Abundant	<p>Animals: May be seen daily, in suitable habitat and season, and counted in relatively large numbers. Plants: Large number of individuals; wide ecological amplitude or occurring in habitats covering a large portion of the park.</p>	
Common	<p>Animals: May be seen daily, in suitable habitat and season, but not in large numbers. Plants: Large numbers of individuals predictably occurring in commonly encountered habitats but not those covering a large portion of the</p>	

Uncommon	<p>park.</p> <p>Animals: Likely to be seen monthly in appropriate season/habitat. May be locally common. Plants: Few to moderate numbers of individuals; occurring either sporadically in commonly encountered habitats or in uncommon habitats.</p>	
Rare	<p>Animals: Present, but usually seen only a few times each year. Plants: Few individuals, usually restricted to small areas of rare habitat.</p>	
Occasional	<p>Animals: Occurs in the park at least once every few years, but not necessarily every year. Plants: Not applicable.</p>	
Unknown	Abundance unknown.	
NA	Not Applicable – Abundance does not apply to the scientific name in the park.	All names on a park’s list that do not have a <i>Park Status</i> of Present should have a <i>Residency</i> of NA.
Residency	Current residency classification for each ANIMAL species in each park.	Applicable only to ANIMALS with the <i>Local List</i> checkbox checked and a <i>Park Status</i> of "Present". The values attempt to balance temporal and behavioral considerations. In practice, the entered value should apply (although there are numerous exceptions) to the residency of the organism at the time that the organism is engaged in its principle behavior (e.g. breeding, migrating, hibernating, etc.) in, or most important behavior to, the park. A future generation of NPSpecies will address the coding of Residency (and associated Abundance) to separate out the temporal and behavior aspects. The Data Source field for Residency is available to provide a citation that specifically addresses Residency in more detail.
Breeder	Population reproduces in the park.	
Resident	A significant population is maintained in the park for more than two months each year, but it is not known to breed there.	
Migratory	Migratory species that occurs in park approximately two months or less each year and does not breed there.	
Vagrant	Park is outside of the species' usual range.	
Unknown	Residency status in park is unknown.	
NA	Not Applicable – Residency does not apply to the scientific name in the park.	All names on a park’s list that do not have a <i>Park Status</i> of Present should have a <i>Residency</i> of NA.
Nativity	Nativity classification for each organism for each park.	Applicable only to organisms with the <i>Local List</i> checkbox checked. If the park-status of an organism is not “Present in Park”, then nativity represents the nativity if the organism were

		eventually confirmed in the park.
Native	The organism is native, or would be native, to the park (either endemic or indigenous).	
Non-Native	The organism is not native, or would not be native, to the park (neither endemic nor indigenous).	Cultivated organisms as defined under the <i>Cultivation</i> field are also considered non-native.
Unknown	Nativity is unknown relative to the park.	
NA	Not Applicable	Applies to names that do not represent organism names for the locale of the park.
Cultivation	Cultivation classification for each non-native organism in each park.	Applicable only to organisms with the <i>Local List</i> checkbox checked, a <i>Park Status</i> of "Present" or "Probably Present" and a <i>Nativity</i> of Non-Native. Cultivation is intended to distinguish between non-native organisms that were introduced as part of a park's mission, and non-native organisms that occur in the park naturally. Cultivation was not intended to apply to organisms that are cultivated for landscape purposes and have not persisted into the natural environment, for example plants in gardens or terrariums, or animals in enclosures. In general, NPSpecies was not intended to include controlled, "domestic" organisms.
Cultivated	A non-native species that is currently cultivated in the park.	
Persistent	A non-native species that persists in the park (either reproducing or non-reproducing) from a previous cultivation in the park.	
Not Cultivated	A non-native species that is not currently cultivated in the park.	
Unknown	A non-native species for which the cultivation in the park is currently unknown.	
NA	Not Applicable – Cultivation does not apply to the non-native scientific name in the park.	All names on a park's list that do not have a <i>Park Status</i> of Present or Probably Present and a <i>Nativity</i> of Non-native should have a <i>Cultivation</i> of NA.

Appendix B. Cumberland Gap National Historical Park Local List (NPSpecies 8/19/2009).

Organisms sorted alphabetically by group (i.e., amphibians, birds, fishes, mammals, reptiles, and vascular plants) and Latin name.

Scientific Name	Common Name	Park Status ¹
Amphibians		
<i>Ambystoma maculatum</i>	spotted salamander	PIP
<i>Ambystoma opacum</i>	marbled salamander	PIP
<i>Aneides aeneus</i>	green salamander	PIP
<i>Bufo americanus</i>	American toad	PIP
<i>Bufo fowleri</i>	Fowler's toad	U
<i>Desmognathus fuscus</i>	northern dusky salamander	PIP
<i>Desmognathus monticola</i>	seal salamander	PIP
<i>Desmognathus walteri</i>	Black Mountain salamander	PIP
<i>Eurycea cirrigera</i>	southern two-lined salamander	PIP
<i>Eurycea longicauda</i>	longtail salamander	U
<i>Eurycea lucifuga</i>	cave salamander	PIP
<i>Gyrinophilus porphyriticus</i>	Kentucky spring salamander	PIP
<i>Hemidactylium scutatum</i>	four-toed salamander	PIP
<i>Hyla chrysoscelis</i>	Cope's gray treefrog	PIP
<i>Hyla versicolor</i>	gray treefrog	F
<i>Notophthalmus viridescens</i>	red-spotted newt	PIP
<i>Plethodon glutinosus</i>	northern slimy salamander	PIP
<i>Plethodon kentucki</i>	Cumberland Plateau salamander	PIP
<i>Plethodon richmondi</i>	southern ravine salamander	PIP
<i>Pseudacris brachyphona</i>	mountain chorus frog	PIP
<i>Pseudacris crucifer</i>	spring peeper	PIP
<i>Pseudacris feriarum</i>	upland chorus frog	PIP
<i>Pseudotriton diastictus</i>	midland mud salamander	PP
<i>Pseudotriton ruber</i>	northern red salamander	PP

Scientific Name	Common Name	Park Status ¹
<i>Rana catesbeiana</i>	bullfrog	PIP
<i>Rana clamitans</i>	green frog	PIP
<i>Rana palustris</i>	pickerel frog	PIP
<i>Rana sylvatica</i>	wood frog	PIP
<i>Scaphiopus holbrookii</i>	eastern spadefoot	PP
Birds		
<i>Accipiter cooperii</i>	Cooper's Hawk	PIP
<i>Accipiter striatus</i>	Sharp-shinned Hawk	PIP
<i>Aegolius acadicus</i>	Northern Saw-whet Owl	PP
<i>Agelaius phoeniceus</i>	Red-winged Blackbird	PIP
<i>Aimophila aestivalis</i>	Bachman's Sparrow	H
<i>Aix sponsa</i>	Wood Duck	PP
<i>Ammodramus savannarum</i>	Grasshopper Sparrow	H
<i>Anas platyrhynchos</i>	Mallard	PIP
<i>Anser albifrons</i>	Greater White-fronted Goose	PIP
<i>Anthus rubescens</i>	American Pipit	PIP
<i>Aquila chrysaetos</i>	Golden Eagle	PP
<i>Archilochus colubris</i>	Ruby-throated Hummingbird	PIP
<i>Ardea herodias</i>	Great Blue Heron	PIP
<i>Baeolophus bicolor</i>	Tufted Titmouse	PIP
<i>Bombycilla cedrorum</i>	Cedar Waxwing	PIP
<i>Bonasa umbellus</i>	Ruffed Grouse	PIP
<i>Branta canadensis</i>	Canada Goose	PIP
<i>Bubo virginianus</i>	Great Horned Owl	PIP
<i>Buteo jamaicensis</i>	Red-tailed Hawk	PIP
<i>Buteo lagopus</i>	Rough-legged Hawk	PP

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Buteo lineatus</i>	Red-shouldered Hawk	PIP
<i>Buteo platypterus</i>	Broad-winged Hawk	PIP
<i>Butorides virescens</i>	Green Heron	PP
<i>Caprimulgus carolinensis</i>	Chuck-will's-widow	PIP
<i>Caprimulgus vociferus</i>	Whip-poor-will	PIP
<i>Cardinalis cardinalis</i>	Northern Cardinal	PIP
<i>Carduelis pinus</i>	Pine Siskin	PIP
<i>Carduelis tristis</i>	American Goldfinch	PIP
<i>Carpodacus mexicanus</i>	House Finch	PIP
<i>Carpodacus purpureus</i>	Purple Finch	PIP
<i>Cathartes aura</i>	Turkey Vulture	PIP
<i>Catharus fuscescens</i>	Veery	PIP
<i>Catharus guttatus</i>	Hermit Thrush	PIP
<i>Catharus minimus</i>	Gray-cheeked Thrush	PIP
<i>Catharus ustulatus</i>	Swainson's Thrush	PIP
<i>Certhia americana</i>	Brown Creeper	PIP
<i>Ceryle alcyon</i>	Belted Kingfisher	PIP
<i>Chaetura pelagica</i>	Chimney Swift	PIP
<i>Charadrius vociferus</i>	Killdeer	PIP
<i>Chen caerulescens</i>	Snow Goose	PIP
<i>Chordeiles minor</i>	Common Nighthawk	PIP
<i>Circus cyaneus</i>	Northern Harrier	PIP
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo	PIP
<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo	PIP
<i>Colaptes auratus</i>	Northern Flicker	PIP
<i>Colinus virginianus</i>	Northern Bobwhite	E
<i>Columba livia</i>	Rock Pigeon	PIP
<i>Contopus cooperi</i>	Olive-sided Flycatcher	PIP
<i>Contopus virens</i>	Eastern Wood-Pewee	PIP
<i>Coragyps atratus</i>	Black Vulture	PIP

Scientific Name	Common Name	Park Status ¹
<i>Corvus brachyrhynchos</i>	American Crow	PIP
<i>Corvus corax</i>	Common Raven	PIP
<i>Cyanocitta cristata</i>	Blue Jay	PIP
<i>Dendroica caerulescens</i>	Black-throated Blue Warbler	PIP
<i>Dendroica castanea</i>	Bay-breasted Warbler	PIP
<i>Dendroica cerulea</i>	Cerulean Warbler	PIP
<i>Dendroica coronata</i>	Yellow-rumped Warbler	PIP
<i>Dendroica discolor</i>	Prairie Warbler	PP
<i>Dendroica dominica</i>	Yellow-throated Warbler	PIP
<i>Dendroica fusca</i>	Blackburnian Warbler	PIP
<i>Dendroica magnolia</i>	Magnolia Warbler	PIP
<i>Dendroica palmarum</i>	Palm Warbler	PIP
<i>Dendroica pensylvanica</i>	Chestnut-sided Warbler	PIP
<i>Dendroica petechia</i>	Yellow Warbler	PP
<i>Dendroica pinus</i>	Pine Warbler	PIP
<i>Dendroica striata</i>	Blackpoll Warbler	PIP
<i>Dendroica tigrina</i>	Cape May Warbler	PIP
<i>Dendroica virens</i>	Black-throated Green Warbler	PIP
<i>Dryocopus pileatus</i>	Pileated Woodpecker	PIP
<i>Dumetella carolinensis</i>	Gray Catbird	PIP
<i>Empidonax flaviventris</i>	Yellow-bellied Flycatcher	PP
<i>Empidonax minimus</i>	Least Flycatcher	PIP
<i>Empidonax virescens</i>	Acadian Flycatcher	PIP
<i>Eremophila alpestris</i>	Horned Lark	PIP
<i>Falco columbarius</i>	Merlin	PIP
<i>Falco peregrinus</i>	Peregrine Falcon	PIP
<i>Falco sparverius</i>	American Kestrel	PIP
<i>Geothlypis trichas</i>	Common Yellowthroat	PIP
<i>Grus canadensis</i>	Sandhill Crane	PP
<i>Haliaeetus leucocephalus</i>	Bald Eagle	PIP

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

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Scientific Name	Common Name	Park Status ¹
<i>Helmitheros vermivorum</i>	Worm-eating Warbler	PIP
<i>Hirundo rustica</i>	Barn Swallow	PIP
<i>Hylocichla mustelina</i>	Wood Thrush	PIP
<i>Icteria virens</i>	Yellow-breasted Chat	PIP
<i>Icterus galbula</i>	Baltimore Oriole	PIP
<i>Icterus spurius</i>	Orchard Oriole	PP
<i>Junco hyemalis</i>	Dark-eyed Junco	PIP
<i>Larus delawarensis</i>	Ring-billed Gull	PIP
<i>Limnothlypis swainsonii</i>	Swainson's Warbler	PIP
<i>Megascops asio</i>	Eastern Screech-Owl	PIP
<i>Melanerpes carolinus</i>	Red-bellied Woodpecker	PIP
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker	PIP
<i>Meleagris gallopavo</i>	Wild Turkey	PIP
<i>Melospiza georgiana</i>	Swamp Sparrow	PIP
<i>Melospiza melodia</i>	Song Sparrow	PIP
<i>Mimus polyglottos</i>	Northern Mockingbird	PIP
<i>Mniotilta varia</i>	Black-and-white Warbler	PIP
<i>Molothrus ater</i>	Brown-headed Cowbird	PIP
<i>Myiarchus crinitus</i>	Great Crested Flycatcher	PIP
<i>Oporornis agilis</i>	Connecticut Warbler	PP
<i>Oporornis formosus</i>	Kentucky Warbler	PIP
<i>Oporornis philadelphia</i>	Mourning Warbler	PP
<i>Pandion haliaetus</i>	Osprey	PIP
<i>Parula americana</i>	Northern Parula	PIP
<i>Passer domesticus</i>	House Sparrow	PIP
<i>Passerella iliaca</i>	Fox Sparrow	PIP
<i>Passerina caerulea</i>	Blue Grosbeak	PIP
<i>Passerina cyanea</i>	Indigo Bunting	PIP
<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	PIP
<i>Picoides borealis</i>	Red-cockaded Woodpecker	H

Scientific Name	Common Name	Park Status ¹
<i>Picoides pubescens</i>	Downy Woodpecker	PIP
<i>Picoides villosus</i>	Hairy Woodpecker	PIP
<i>Pipilo erythrophthalmus</i>	Eastern Towhee	PIP
<i>Piranga olivacea</i>	Scarlet Tanager	PIP
<i>Piranga rubra</i>	Summer Tanager	PIP
<i>Poecile carolinensis</i>	Carolina Chickadee	PIP
<i>Polioptila caerulea</i>	Blue-gray Gnatcatcher	PIP
<i>Progne subis</i>	Purple Martin	PIP
<i>Protonotaria citrea</i>	Prothonotary Warbler	U
<i>Quiscalus quiscula</i>	Common Grackle	PIP
<i>Regulus calendula</i>	Ruby-crowned Kinglet	PIP
<i>Regulus satrapa</i>	Golden-crowned Kinglet	PIP
<i>Sayornis phoebe</i>	Eastern Phoebe	PIP
<i>Scolopax minor</i>	American Woodcock	PIP
<i>Seiurus aurocapilla</i>	Ovenbird	PIP
<i>Seiurus motacilla</i>	Louisiana Waterthrush	PIP
<i>Seiurus noveboracensis</i>	Northern Waterthrush	PIP
<i>Setophaga ruticilla</i>	American Redstart	PIP
<i>Sialia sialis</i>	Eastern Bluebird	PIP
<i>Sitta canadensis</i>	Red-breasted Nuthatch	PIP
<i>Sitta carolinensis</i>	White-breasted Nuthatch	PIP
<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker	PIP
<i>Spizella passerina</i>	Chipping Sparrow	PIP
<i>Spizella pusilla</i>	Field Sparrow	PIP
<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow	PIP
<i>Strix varia</i>	Barred Owl	PIP
<i>Sturnella magna</i>	Eastern Meadowlark	PIP
<i>Sturnus vulgaris</i>	European Starling	PIP
<i>Tachycineta bicolor</i>	Tree Swallow	PIP
<i>Thryothorus ludovicianus</i>	Carolina Wren	PIP

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Toxostoma rufum</i>	Brown Thrasher	PIP
<i>Troglodytes aedon</i>	House Wren	PP
<i>Troglodytes troglodytes</i>	Winter Wren	PIP
<i>Turdus migratorius</i>	American Robin	PIP
<i>Tyrannus tyrannus</i>	Eastern Kingbird	PIP
<i>Vermivora celata</i>	Orange-crowned Warbler	PIP
<i>Vermivora chrysoptera</i>	Golden-winged Warbler	PIP
<i>Vermivora peregrina</i>	Tennessee Warbler	PIP
<i>Vermivora pinus</i>	Blue-winged Warbler	PIP
<i>Vermivora ruficapilla</i>	Nashville Warbler	PIP
<i>Vireo flavifrons</i>	Yellow-throated Vireo	PIP
<i>Vireo gilvus</i>	Warbling Vireo	PIP
<i>Vireo griseus</i>	White-eyed Vireo	PIP
<i>Vireo olivaceus</i>	Red-eyed Vireo	PIP
<i>Vireo philadelphicus</i>	Philadelphia Vireo	PIP
<i>Vireo solitarius</i>	Blue-headed Vireo	PIP
<i>Wilsonia canadensis</i>	Canada Warbler	PIP
<i>Wilsonia citrina</i>	Hooded Warbler	PIP
<i>Wilsonia pusilla</i>	Wilson's Warbler	PP
<i>Zenaidura macroura</i>	Mourning Dove	PIP
<i>Zonotrichia albicollis</i>	White-throated Sparrow	PIP
<i>Zonotrichia leucophrys</i>	White-crowned Sparrow	E
Fishes		
<i>Ambloplites rupestris</i>	rock bass	PIP
<i>Ameiurus melas</i>	black bullhead	U
<i>Ameiurus natalis</i>	yellow bullhead	U
<i>Ammocrypta clara</i>	western sand darter	PP
<i>Ammocrypta pellucida</i>	eastern sand darter	U
<i>Anguilla rostrata</i>	American eel	U
<i>Campostoma anomalum</i>	central stoneroller	PIP

Scientific Name	Common Name	Park Status ¹
<i>Catostomus commersonii</i>	white sucker	PIP
<i>Chaenobryttus gulosus</i>	warmouth	PIP
<i>Clinostomus elongatus</i>	redside dace	U
<i>Clinostomus funduloides</i>	rosyside dace	U
<i>Cottus bairdii</i>	mottled sculpin	U
<i>Cottus carolinae</i>	banded sculpin	PIP
<i>Cyprinella galactura</i>	whitetail shiner	PP
<i>Cyprinella spiloptera</i>	spotfin shiner	U
<i>Cyprinella whipplei</i>	steelcolor shiner	U
<i>Cyprinus carpio</i>	common carp	U
<i>Erimonax monachus</i>	spotfin chub	U
<i>Erimystax cahni</i>	slender chub	U
<i>Erimystax dissimilis</i>	streamline chub	U
<i>Etheostoma baileyi</i>	emerald darter	U
<i>Etheostoma blennioides</i>	greenside darter	PIP
<i>Etheostoma caeruleum</i>	rainbow darter	PIP
<i>Etheostoma camurum</i>	bluebreast darter	U
<i>Etheostoma cinereum</i>	ashy darter	U
<i>Etheostoma flabellare</i>	fantail darter	PIP
<i>Etheostoma kennicotti</i>	stripetail darter	PIP
<i>Etheostoma sagitta</i>	arrow darter	PIP
<i>Etheostoma simoterum</i>	snubnose darter	PP
<i>Etheostoma simoterum simoterum</i>	snubnose darter	PIP
<i>Etheostoma susanae</i>	Cumberland johnny darter	U
<i>Etheostoma tippecanoe</i>	tippecanoe darter	U
<i>Etheostoma variatum</i>	variegated darter	U
<i>Etheostoma virgatum</i>	striped darter	U
<i>Etheostoma zonale</i>	banded darter	U
<i>Gambusia affinis</i>	mosquitofish	U
<i>Hemitremia flammea</i>	flame chub	U

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Hybopsis amblops</i>	bigeye chub	U
<i>Hypentelium nigricans</i>	northern hogsucker	PIP
<i>Ichthyomyzon bdellium</i>	Ohio lamprey	U
<i>Ichthyomyzon fossor</i>	northern brook lamprey	U
<i>Ichthyomyzon greeleyi</i>	mountain brook lamprey	U
<i>Ichthyomyzon unicuspis</i>	silver lamprey	U
<i>Ictalurus punctatus</i>	channel catfish	U
<i>Labidesthes sicculus</i>	brook silverside	U
<i>Lampetra aepyptera</i>	least brook lamprey	U
<i>Lampetra appendix</i>	American brook lamprey	U
<i>Lepomis auritus</i>	redbreast sunfish	PIP
<i>Lepomis cyanellus</i>	green sunfish	PIP
<i>Lepomis macrochirus</i>	bluegill	PIP
<i>Lepomis megalotis</i>	longear sunfish	U
<i>Lepomis microlophus</i>	redeer sunfish	U
<i>Luxilus chrysocephalus</i>	striped shiner	PIP
<i>Lythrurus ardens</i>	rosefin shiner	U
<i>Micropterus coosae</i>	redestye bass	U
<i>Micropterus dolomieu</i>	smallmouth bass	U
<i>Micropterus punctulatus</i>	spotted bass	PIP
<i>Micropterus salmoides</i>	largemouth bass	PIP
<i>Moxostoma anisurum</i>	silver redestye	U
<i>Moxostoma erythrurum</i>	golden redestye	U
<i>Notropis ariommus</i>	popeye shiner	U
<i>Notropis buccatus</i>	silverjaw minnow	PIP
<i>Notropis chlorocephalus</i>	greenhead shiner	F
<i>Notropis photogenis</i>	silver shiner	U
<i>Notropis rubellus</i>	rosyface shiner	PIP
<i>Notropis stramineus</i>	sand shiner	U
<i>Notropis volucellus</i>	mimic shiner	U

Scientific Name	Common Name	Park Status ¹
<i>Noturus eleutherus</i>	mountain madtom	U
<i>Noturus flavipinnis</i>	yellowfin madtom	U
<i>Noturus flavus</i>	stonecat	U
<i>Noturus miurus</i>	brindled madtom	U
<i>Oncorhynchus mykiss</i>	rainbow trout	U
<i>Perca flavescens</i>	yellow perch	U
<i>Percina aurantiaca</i>	tangerine darter	PP
<i>Percina caprodes</i>	logperch	U
<i>Percina maculata</i>	blackside darter	U
<i>Percina oxyrhynchus</i>	sharpnose darter	U
<i>Percina sciera</i>	dusky darter	U
<i>Phenacobius uranops</i>	stargazing minnow	U
<i>Phoxinus cumberlandensis</i>	blackside dace	PIP
<i>Phoxinus erythrogaster</i>	southern redbelly dace	PIP
<i>Pimephales notatus</i>	bluntnose minnow	PIP
<i>Pimephales promelas</i>	fathead minnow	U
<i>Pomoxis annularis</i>	white crappie	U
<i>Pomoxis nigromaculatus</i>	black crappie	U
<i>Pylodictis olivaris</i>	flathead catfish	U
<i>Rhinichthys atratulus</i>	blacknose dace	PIP
<i>Rhinichthys cataractae</i>	longnose dace	U
<i>Salvelinus fontinalis</i>	brook trout	U
<i>Semotilus atromaculatus</i>	creek chub	PIP
Mammals		
<i>Blarina brevicauda</i>	northern short-tailed shrew	PIP
<i>Canis familiaris</i>	domestic dog	PP
<i>Canis latrans</i>	coyote	PIP
<i>Castor canadensis</i>	American beaver	PIP
<i>Cervus elaphus</i>	elk	PP
<i>Clethrionomys gapperi</i>	southern red-backed vole	PIP

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Corynorhinus rafinesquii</i>	Rafinesque's big-eared bat	PP
<i>Cryptotis parva</i>	least shrew	PIP
<i>Didelphis virginiana</i>	Virginia opossum	PIP
<i>Eptesicus fuscus</i>	big brown bat	PIP
<i>Felis catus</i>	domestic cat	PP
<i>Glaucomys volans</i>	southern flying squirrel	PIP
<i>Lasionycteris noctivagans</i>	silver-haired bat	PIP
<i>Lasiurus borealis</i>	eastern red bat	PIP
<i>Lasiurus cinereus</i>	hoary bat	PIP
<i>Lontra canadensis</i>	river otter	U
<i>Lynx rufus</i>	bobcat	PIP
<i>Marmota monax</i>	woodchuck	PIP
<i>Mephitis mephitis</i>	striped skunk	PIP
<i>Microtus pennsylvanicus</i>	meadow vole	U
<i>Microtus pinetorum</i>	woodland vole	PIP
<i>Mus musculus</i>	house mouse	E
<i>Mustela frenata</i>	long-tailed weasel	PP
<i>Mustela nivalis</i>	least weasel	U
<i>Mustela vison</i>	mink	PP
<i>Myotis grisescens</i>	gray bat	PP
<i>Myotis leibii</i>	eastern small-footed bat	PIP
<i>Myotis lucifugus</i>	little brown bat	PIP
<i>Myotis septentrionalis</i>	northern bat	PIP
<i>Myotis sodalis</i>	Indiana bat	PIP
<i>Napaeozapus insignis</i>	woodland jumping mouse	PIP
<i>Neotoma magister</i>	Allegheny woodrat	PIP
<i>Ochrotomys nuttalli</i>	golden mouse	PIP
<i>Odocoileus virginianus</i>	white-tailed deer	PIP
<i>Ondatra zibethicus</i>	muskkrat	PIP
<i>Oryzomys palustris</i>	marsh rice rat	U

Scientific Name	Common Name	Park Status ¹
<i>Parascalops breweri</i>	hairy-tailed mole	PIP
<i>Peromyscus leucopus</i>	white-footed mouse	PIP
<i>Peromyscus maniculatus nubiterrae</i>	cloudland deer mouse	PIP
<i>Pipistrellus subflavus</i>	eastern pipistrelle	PIP
<i>Procyon lotor</i>	raccoon	PIP
<i>Rattus norvegicus</i>	Norway rat	E
<i>Reithrodontomys humulis</i>	eastern harvest mouse	U
<i>Scalopus aquaticus</i>	eastern mole	U
<i>Sciurus carolinensis</i>	eastern gray squirrel	PIP
<i>Sciurus niger</i>	eastern fox squirrel	U
<i>Sigmodon hispidus</i>	hispid cotton rat	PIP
<i>Sorex cinereus</i>	masked shrew	PIP
<i>Sorex dispar</i>	long-tailed shrew	PP
<i>Sorex fumeus</i>	smoky shrew	PIP
<i>Sorex hoyi</i>	pygmy shrew	PIP
<i>Sorex longirostris</i>	southeastern shrew	U
<i>Sorex palustris</i>	water shrew	U
<i>Spilogale putorius</i>	eastern spotted skunk	PIP
<i>Sus scrofa</i>	feral pig	U
<i>Sylvilagus floridanus</i>	eastern cottontail	PIP
<i>Sylvilagus obscurus</i>	Appalachian cottontail	PP
<i>Synaptomys cooperi</i>	southern bog lemming	PIP
<i>Tamias striatus</i>	eastern chipmunk	PIP
<i>Urocyon cinereoargenteus</i>	gray fox	PIP
<i>Ursus americanus</i>	black bear	PIP
<i>Vulpes vulpes</i>	red fox	U
Reptiles		
<i>Agkistrodon contortrix</i>	copperhead	PIP
<i>Carphophis amoenus</i>	worm snake	PIP
<i>Chelydra serpentina</i>	common snapping turtle	U

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

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Scientific Name	Common Name	Park Status ¹
<i>Coluber constrictor</i>	black racer	PIP
<i>Crotalus horridus</i>	timber rattlesnake	PIP
<i>Diadophis punctatus</i>	ringneck snake	PIP
<i>Elaphe spiloides</i>	black rat snake	PIP
<i>Eumeces fasciatus</i>	five-lined skink	PIP
<i>Lampropeltis getula nigra</i>	black kingsnake	U
<i>Lampropeltis triangulum triangulum</i>	eastern milk snake	PP
<i>Nerodia sipedon</i>	northern water snake	PIP
<i>Opheodrys aestivus</i>	rough green snake	PP
<i>Sceloporus undulatus</i>	eastern fence lizard	PIP
<i>Scincella lateralis</i>	ground skink	PP
<i>Sternotherus odoratus</i>	common musk turtle	U
<i>Storeria occipitomaculata</i>	northern redbelly snake	PIP
<i>Terrapene carolina</i>	eastern box turtle	PIP
<i>Thamnophis sirtalis</i>	eastern garter snake	PIP
<i>Virginia valeriae valeriae</i>	eastern earth snake	PP
Vascular Plants		
<i>Abutilon theophrasti</i>	velvetleaf	U
<i>Acalypha rhomboidea</i>		PIP
<i>Acalypha virginica</i>	Virginia threeseed mercury	PIP
<i>Acer negundo</i>	box elder	PIP
<i>Acer negundo var. negundo</i>	box elder	U
<i>Acer nigrum</i>	black maple	U
<i>Acer pensylvanicum</i>	striped maple	PIP
<i>Acer rubrum</i>	red maple	PIP
<i>Acer rubrum var. rubrum</i>	red maple	U
<i>Acer rubrum var. trilobum</i>	red maple	PIP
<i>Acer saccharinum</i>	silver maple	U
<i>Acer saccharum</i>	sugar maple	PIP

Scientific Name	Common Name	Park Status ¹
<i>Acer saccharum var. saccharum</i>	sugar maple	PIP
<i>Acer spicatum</i>	mountain maple	U
<i>Achillea millefolium</i>	common yarrow	PIP
<i>Acinos arvensis</i>	basil thyme	U
<i>Aconitum uncinatum</i>	southern blue monkshood	U
<i>Acorus americanus</i>	sweetflag	U
<i>Acorus calamus</i>	sweetflag	PIP
<i>Actaea pachypoda</i>	white baneberry	PIP
<i>Actaea podocarpa</i>		U
<i>Actaea racemosa var. racemosa</i>		PIP
<i>Actaea rubifolia</i>		U
<i>Adiantum pedatum</i>	northern maidenhair-fern	PIP
<i>Adlumia fungosa</i>	climbing fumitory	PIP
<i>Aesculus flava</i>	yellow buckeye	PIP
<i>Agalinis purpurea</i>	purple false foxglove	U
<i>Agalinis tenuifolia</i>	slender false-foxglove	PIP
<i>Agalinis tenuifolia var. tenuifolia</i>	slenderleaf false foxglove	U
<i>Ageratina altissima</i>	white snakeroot	PIP
<i>Ageratina altissima var. altissima</i>	white snakeroot	PIP
<i>Ageratina altissima var. roanensis</i>		U
<i>Ageratina aromatica</i>	lesser snakeroot	PIP
<i>Agrimonia gryposepala</i>	tall hairy groovebur	PIP
<i>Agrimonia parviflora</i>	swamp agrimony	PIP
<i>Agrimonia pubescens</i>	soft agrimony	PIP
<i>Agrimonia rostellata</i>	woodland agrimony	PIP
<i>Agrostemma githago</i>	common corncockle	U
<i>Agrostis gigantea</i>	redtop	U
<i>Agrostis hyemalis</i>	winter bentgrass	PIP

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Agrostis perennans</i>	perennial bentgrass	PIP
<i>Agrostis stolonifera</i>	spreading bentgrass	PIP
<i>Ailanthus altissima</i>	tree-of-heaven	PIP
<i>Albizia julibrissin</i>	silk tree	PIP
<i>Aletris farinosa</i>	white colicroot	U
<i>Alisma subcordatum</i>	broad-leaved water-plantain	PIP
<i>Allium burdickii</i>	narrowleaf wild leek	U
<i>Allium canadense</i>	meadow garlic	U
<i>Allium cernuum</i>	nodding onion	PIP
<i>Allium tricoccum</i>	wild leek	PIP
<i>Allium vineale ssp. vineale</i>	wild garlic	PIP
<i>Alnus serrulata</i>	brook-side alder	PIP
<i>Alopecurus arundinaceus</i>	creeping meadow foxtail	U
<i>Amaranthus hybridus</i>	slim amaranth	U
<i>Amaranthus retroflexus</i>	redroot amaranth	U
<i>Amaranthus spinosus</i>	spiny amaranth	PIP
<i>Ambrosia artemisiifolia</i>	annual ragweed	PIP
<i>Ambrosia artemisiifolia var. elatior</i>	annual ragweed	U
<i>Ambrosia trifida var. trifida</i>	great ragweed	PIP
<i>Amelanchier arborea</i>	downy serviceberry	PIP
<i>Amelanchier arborea var. arborea</i>	common serviceberry	U
<i>Amelanchier canadensis</i>	Canadian serviceberry	PIP
<i>Amelanchier laevis</i>	Allegheny service-berry	PIP
<i>Amianthium muscitoxicum</i>	fly-poison	PIP
<i>Ampelopsis arborea</i>	peppervine	U
<i>Ampelopsis cordata</i>	heartleaf peppervine	U
<i>Amphicarpaea bracteata</i>	American hog-peanut	PIP
<i>Amsonia tabernaemontana var. tabernaemontana</i>	eastern bluestar	U
<i>Anagallis arvensis</i>	scarlet pimpernel	U

Scientific Name	Common Name	Park Status ¹
<i>Anagallis minima</i>	chaffweed	U
<i>Andropogon gerardii</i>	big bluestem	PIP
<i>Andropogon glomeratus</i>	bushy bluestem	U
<i>Andropogon glomeratus var. glomeratus</i>	bushy bluestem	U
<i>Andropogon ternarius</i>	splitbeard bluestem	U
<i>Andropogon virginicus</i>	broom-sedge	PIP
<i>Andropogon virginicus var. virginicus</i>	broomsedge bluestem	U
<i>Anemone quinquefolia</i>	wood anemone	PIP
<i>Anemone quinquefolia var. bifolia</i>	twoleaf anemone	U
<i>Anemone quinquefolia var. quinquefolia</i>	nightcaps	U
<i>Anemone virginiana var. virginiana</i>	tall thimbleweed	PIP
<i>Angelica triquinata</i>	filmy angelica	U
<i>Angelica venenosa</i>	hairy angelica	PIP
<i>Antennaria parlinii</i>		U
<i>Antennaria parlinii ssp. parlinii</i>	Parlin's pussytoes	U
<i>Antennaria plantaginifolia</i>	plantain-leaf pussytoes	PIP
<i>Antennaria solitaria</i>	single-head pussytoes	PIP
<i>Anthemis arvensis</i>	corn chamomile	U
<i>Anthemis cotula</i>	stinking chamomile	U
<i>Anthoxanthum odoratum</i>	sweet vernalgrass	PIP
<i>Apios americana</i>	American groundnut	PIP
<i>Aplectrum hyemale</i>	puttyroot	PIP
<i>Apocynum cannabinum</i>	Indian-hemp	PIP
<i>Aquilegia canadensis</i>	wild columbine	PIP
<i>Arabis canadensis</i>	sicklepod	PIP
<i>Arabis laevigata</i>	smooth rockcress	PIP
<i>Arabis laevigata var. laevigata</i>	smooth rockcress	U

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Arabis lyrata</i>	lyre-leaf rockcress	PIP
<i>Arabis patens</i>	spreading rockcress	U
<i>Aralia nudicaulis</i>	wild sarsaparilla	PIP
<i>Aralia racemosa</i> ssp. <i>racemosa</i>	American spikenard	PIP
<i>Aralia spinosa</i>	hercules club	PIP
<i>Arctium minus</i>	lesser burdock	U
<i>Arenaria serpyllifolia</i>	thymeleaf sandwort	U
<i>Arisaema dracontium</i>	green dragon	PIP
<i>Arisaema triphyllum</i>	swamp jack-in-the-pulpit	PIP
<i>Arisaema triphyllum</i> ssp. <i>pusillum</i>	Jack in the pulpit	U
<i>Arisaema triphyllum</i> ssp. <i>quinatum</i>	Jack in the pulpit	U
<i>Arisaema triphyllum</i> ssp. <i>triphyllum</i>	Jack in the pulpit	U
<i>Aristida dichotoma</i>	churchmouse threeawn	U
<i>Aristida dichotoma</i> var. <i>dichotoma</i>	churchmouse threeawn	U
<i>Aristida purpurascens</i>	arrowfeather threeawn	U
<i>Aristida ramosissima</i>	s-curve threeawn	U
<i>Aristolochia macrophylla</i>	pipevine	PIP
<i>Aristolochia serpentaria</i>	Virginia snakeroot	PIP
<i>Aristolochia tomentosa</i>	woolly dutchman's pipe	U
<i>Arnoglossum atriplicifolium</i>	pale Indian-plantain	PIP
<i>Arrhenatherum elatius</i>	tall oatgrass	U
<i>Artemisia annua</i>	sweet sagewort	U
<i>Artemisia vulgaris</i> var. <i>vulgaris</i>	common wormwood	U
<i>Arthraxon hispidus</i>	small carpgrass	U
<i>Aruncus dioicus</i>	common goatsbeard	PIP
<i>Aruncus dioicus</i> var. <i>dioicus</i>	bride's feathers	U
<i>Arundinaria gigantea</i>	giant cane	PIP

Scientific Name	Common Name	Park Status ¹
<i>Arundinaria gigantea</i> ssp. <i>gigantea</i>	giant cane	U
<i>Asarum canadense</i>	Canada wild-ginger	PIP
<i>Asclepias amplexicaulis</i>	clasping milkweed	U
<i>Asclepias exaltata</i>	poke milkweed	PIP
<i>Asclepias incarnata</i>	swamp milkweed	PIP
<i>Asclepias purpurascens</i>	purple milkweed	U
<i>Asclepias quadrifolia</i>	whorled milkweed	PIP
<i>Asclepias syriaca</i>	common milkweed	PIP
<i>Asclepias tuberosa</i>	butterfly milkweed	PIP
<i>Asclepias tuberosa</i> ssp. <i>interior</i>	butterfly milkweed	U
<i>Asclepias variegata</i>	white milkweed	PIP
<i>Asclepias verticillata</i>	whorled milkweed	PIP
<i>Asclepias viridiflora</i>	green milkweed	PIP
<i>Asimina triloba</i>	pawpaw	PIP
<i>Asparagus officinalis</i>	garden asparagus	U
<i>Asplenium bradleyi</i>	Bradley's spleenwort	U
<i>Asplenium montanum</i>	mountain spleenwort	PIP
<i>Asplenium pinnatifidum</i>	lobed spleenwort	PIP
<i>Asplenium platyneuron</i>	ebony spleenwort	PIP
<i>Asplenium platyneuron</i> var. <i>platyneuron</i>	ebony spleenwort	U
<i>Asplenium resiliens</i>	black-stem spleenwort	PIP
<i>Asplenium rhizophyllum</i>	walking-fern spleenwort	PIP
<i>Asplenium ruta-muraria</i>	wallrue spleenwort	PIP
<i>Asplenium trichomanes</i>	maidenhair spleenwort	PIP
<i>Asplenium X trudellii</i>	Trudell's spleenwort	U
<i>Astilbe biternata</i>	Appalachian false goat's beard	U
<i>Astragalus canadensis</i>	Canadian milkvetch	U
<i>Athyrium filix-femina</i>	common ladyfern	PIP

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Athyrium filix-femina</i> ssp. <i>asplenioides</i>	asplenium ladyfern	PIP
<i>Aureolaria flava</i>	yellow false-foxglove	PIP
<i>Aureolaria laevigata</i>	entire-leaf yellow false foxglove	PIP
<i>Aureolaria patula</i>	spreading yellow false foxglove	U
<i>Aureolaria pedicularia</i>	fernleaf yellow false-foxglove	PIP
<i>Aureolaria pedicularia</i> var. <i>austromontana</i>	fernleaf yellow false foxglove	U
<i>Aureolaria virginica</i>	downy false-foxglove	PIP
<i>Avena sativa</i>	common oat	PIP
<i>Baptisia tinctoria</i>	horseflyweed	U
<i>Barbarea verna</i>	early yellowrocket	PIP
<i>Barbarea vulgaris</i>	yellow rocket	PIP
<i>Bartonia virginica</i>	yellow screwstem	U
<i>Belamcanda chinensis</i>	blackberry lily	PIP
<i>Bellis perennis</i>	lawndaisy	U
<i>Berberis canadensis</i>	American barberry	U
<i>Berberis thunbergii</i>	Japanese barberry	PIP
<i>Betula alleghaniensis</i>	yellow birch	PIP
<i>Betula alleghaniensis</i> var. <i>alleghaniensis</i>	yellow birch	U
<i>Betula lenta</i>	sweet birch	PIP
<i>Betula nigra</i>	river birch	PIP
<i>Bidens aristosa</i>	bearded beggarticks	PIP
<i>Bidens bipinnata</i>	Spanish-needles	PIP
<i>Bidens frondosa</i>	devil's beggar-ticks	PIP
<i>Bidens tripartita</i>	three-lobed beggar-ticks	PIP
<i>Bidens vulgata</i>	big devils beggartick	U
<i>Bignonia capreolata</i>	crossvine	PIP
<i>Blephilia ciliata</i>	downy woodmint	PIP
<i>Blephilia hirsuta</i> var. <i>hirsuta</i>		PIP

Scientific Name	Common Name	Park Status ¹
<i>Boehmeria cylindrica</i>	false nettle	PIP
<i>Botrychium biternatum</i>	sparselobe grapefern	U
<i>Botrychium dissectum</i>	cutleaf grape-fern	PIP
<i>Botrychium matricariifolium</i>	matricary grapefern	U
<i>Botrychium oneidense</i>	bluntlobe grapefern	U
<i>Botrychium virginianum</i>	rattlesnake fern	PIP
<i>Bouteloua curtipendula</i>	sideoats grama	U
<i>Boykinia aconitifolia</i>	brook saxifrage	PIP
<i>Brachyelytrum erectum</i>	bearded short-husk	PIP
<i>Brassica napus</i>	turnip	PIP
<i>Brassica rapa</i>	field mustard	PIP
<i>Brickellia eupatorioides</i>	false boneset	PIP
<i>Brickellia eupatorioides</i> var. <i>eupatorioides</i>	false boneset	U
<i>Bromus commutatus</i>	meadow brome	U
<i>Bromus japonicus</i>	Japanese brome	PIP
<i>Bromus pubescens</i>	hairy wood brome grass	PIP
<i>Bromus racemosus</i>	bald brome	U
<i>Bromus secalinus</i>	rye brome	U
<i>Bromus tectorum</i>	cheatgrass	U
<i>Buglossoides arvensis</i>	corn gromwell	U
<i>Bulbostylis capillaris</i> ssp. <i>capillaris</i>	densetuft hairsedge	U
<i>Calamagrostis coarctata</i>	arctic reedgrass	U
<i>Calamagrostis porteri</i>	Porter's reedgrass	PIP
<i>Calamagrostis porteri</i> ssp. <i>porteri</i>	Porter's reedgrass	PIP
<i>Calamintha nepeta</i> ssp. <i>glandulosa</i>		U
<i>Calamintha nepeta</i> ssp. <i>nepeta</i>	lesser calamint	U
<i>Callitriche heterophylla</i>	large water-starwort	PIP
<i>Callitriche terrestris</i>	terrestrial waterstarwort	U

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Calopogon tuberosus</i> var. <i>tuberosus</i>		U
<i>Calycanthus floridus</i> var. <i>glaucus</i>	eastern sweetshrub	U
<i>Calystegia sepium</i>	hedge bindweed	PIP
<i>Calystegia silvatica</i> ssp. <i>fraterniflora</i>	shortstalk false bindweed	U
<i>Calystegia spithamea</i>	low false bindweed	PIP
<i>Camassia scilloides</i>	Atlantic camas	U
<i>Campanula divaricata</i>	southern harebell	PIP
<i>Campanulastrum americanum</i>	tall bellflower	PIP
<i>Campsis radicans</i>	trumpet creeper	PIP
<i>Capsella bursa-pastoris</i>	common shepherd's purse	PIP
<i>Cardamine angustata</i>	slender toothwort	PIP
<i>Cardamine bulbosa</i>	bulbous bittercress	U
<i>Cardamine concatenata</i>	cutleaf toothwort	PIP
<i>Cardamine diphylla</i>	two-leaf toothwort	PIP
<i>Cardamine dissecta</i>	forkleaf toothwort	U
<i>Cardamine douglassii</i>	limestone bittercress	U
<i>Cardamine hirsuta</i>	hairy bitter-cress	PIP
<i>Cardamine maxima</i>	large toothwort	U
<i>Cardamine pennsylvanica</i>	Pennsylvania bitter-cress	PIP
<i>Cardamine rotundifolia</i>	round-leaf water cress	PIP
<i>Carduus nutans</i>	musk thistle	PIP
<i>Carex abscondita</i>	thicket sedge	PIP
<i>Carex aestivalis</i>	summer sedge	U
<i>Carex albicans</i>	whitetinge sedge	PIP
<i>Carex albicans</i> var. <i>albicans</i>	whitetinge sedge	PIP
<i>Carex albursina</i>	white bear sedge	U
<i>Carex amphibola</i>	eastern narrowleaf sedge	PIP
<i>Carex annectens</i>	yellowfruit sedge	U
<i>Carex appalachica</i>	Appalachian sedge	PIP

Scientific Name	Common Name	Park Status ¹
<i>Carex argyrantha</i>	hay sedge	U
<i>Carex atlantica</i>	prickly bog sedge	U
<i>Carex atlantica</i> ssp. <i>atlantica</i>	prickly bog sedge	PIP
<i>Carex austrocaroliniana</i>	tarheel sedge	PIP
<i>Carex baileyi</i>	Bailey's sedge	PIP
<i>Carex blanda</i>	woodland sedge	PIP
<i>Carex bromoides</i>	bromelike sedge	PIP
<i>Carex careyana</i>	Carey's sedge	PIP
<i>Carex caroliniana</i>	Carolina sedge	U
<i>Carex cephalophora</i>	oval-leaved sedge	PIP
<i>Carex communis</i>	fibrousroot sedge	U
<i>Carex complanata</i>	blue sedge	U
<i>Carex crebriflora</i>	coastalplain sedge	U
<i>Carex crinita</i>	fringed sedge	PIP
<i>Carex crinita</i> var. <i>crinita</i>	fringed sedge	U
<i>Carex cumberlandensis</i>	Cumberland sedge	PIP
<i>Carex debilis</i>	white edge sedge	PIP
<i>Carex debilis</i> var. <i>debilis</i>	white edge sedge	U
<i>Carex debilis</i> var. <i>pubera</i>	white edge sedge	PIP
<i>Carex debilis</i> var. <i>rudgei</i>	white-edge sedge	PIP
<i>Carex digitalis</i>	slender wood sedge	PIP
<i>Carex eburnea</i>	bristleleaf sedge	U
<i>Carex flaccosperma</i>	thinfuit sedge	U
<i>Carex frankii</i>	Frank's sedge	PIP
<i>Carex gracilescens</i>	slender looseflower sedge	U
<i>Carex gracillima</i>	graceful sedge	PIP
<i>Carex granularis</i>	limestone meadow sedge	U
<i>Carex gynandra</i>	nodding sedge	PIP
<i>Carex hirsutella</i>	fuzzy wuzzy sedge	PIP
<i>Carex hystericina</i>	bottlebrush sedge	U

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Carex interior</i>	inland sedge	PIP
<i>Carex intumescens</i>	bladder sedge	PIP
<i>Carex jamesii</i>	James' sedge	PIP
<i>Carex laevivaginata</i>	smooth-sheath sedge	PIP
<i>Carex laxiculmis</i>	spreading sedge	PIP
<i>Carex laxiflora</i>	loose-flowered sedge	PIP
<i>Carex laxiflora var. laxiflora</i>	broad looseflower sedge	U
<i>Carex leavenworthii</i>	Leavenworth's sedge	PIP
<i>Carex leptalea</i>	bristly-stalk sedge	PIP
<i>Carex leptalea ssp. harperi</i>	Harper's sedge	U
<i>Carex leptoneuria</i>	nerveless woodland sedge	U
<i>Carex lucorum</i>	blue ridge sedge	PIP
<i>Carex lucorum var. lucorum</i>	blue ridge sedge	PIP
<i>Carex lupulina</i>	hop sedge	U
<i>Carex lurida</i>	shallow sedge	PIP
<i>Carex meadii</i>	Mead's sedge	U
<i>Carex mesochorea</i>	midland sedge	PIP
<i>Carex muehlenbergii</i>	Muhlenberg's sedge	U
<i>Carex muehlenbergii var. enervis</i>	muhlenberg's sedge	PIP
<i>Carex muehlenbergii var. muehlenbergii</i>	Muhlenberg's sedge	U
<i>Carex nigromarginata</i>	black edge sedge	PIP
<i>Carex normalis</i>	greater straw sedge	PIP
<i>Carex oligocarpa</i>	richwoods sedge	U
<i>Carex pedunculata</i>	longstalk sedge	U
<i>Carex pennsylvanica</i>	Pennsylvania sedge	PIP
<i>Carex plantaginea</i>	plantainleaf sedge	PIP
<i>Carex platyphylla</i>	broad-leaved sedge	PIP
<i>Carex prasina</i>	drooping sedge	PIP
<i>Carex projecta</i>	necklace sedge	PIP

Scientific Name	Common Name	Park Status ¹
<i>Carex purpurifera</i>	purple sedge	PIP
<i>Carex radiata</i>	stellate sedge	PIP
<i>Carex retroflexa</i>	reflexed sedge	PIP
<i>Carex rosea</i>	rosy sedge	PIP
<i>Carex ruthii</i>	Ruth's sedge	U
<i>Carex scabrata</i>	rough sedge	PIP
<i>Carex scoparia var. scoparia</i>	broom sedge	U
<i>Carex sparganioides</i>	burr reed sedge	U
<i>Carex squarrosa</i>	squarrose sedge	U
<i>Carex stipata</i>	owlfruit sedge	U
<i>Carex stipata var. stipata</i>	owlfruit sedge	U
<i>Carex striatula</i>	lined sedge	PIP
<i>Carex stricta</i>	uptight sedge	U
<i>Carex styloflexa</i>	bent sedge	PIP
<i>Carex swanii</i>	swan sedge	PIP
<i>Carex tonsa var. rugosperma</i>		U
<i>Carex torta</i>	twisted sedge	PIP
<i>Carex tribuloides</i>	blunt broom sedge	PIP
<i>Carex tribuloides var. sangamonensis</i>	blunt broom sedge	U
<i>Carex tribuloides var. tribuloides</i>	blunt broom sedge	U
<i>Carex virescens</i>	ribbed sedge	PIP
<i>Carex vulpinoidea</i>	fox sedge	PIP
<i>Carex willdenowii</i>	Willdenow's sedge	U
<i>Carpinus caroliniana</i>	American hornbeam	PIP
<i>Carpinus caroliniana ssp. caroliniana</i>	American hornbeam	U
<i>Carya alba</i>	mockernut hickory	PIP
<i>Carya cordiformis</i>	bitter-nut hickory	PIP
<i>Carya glabra</i>	sweet pignut hickory	PIP
<i>Carya illinoensis</i>	pecan	U

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Carya laciniosa</i>	big shellbark hickory	PIP
<i>Carya ovalis</i>	red hickory	PIP
<i>Carya ovata</i>	shag-bark hickory	PIP
<i>Carya pallida</i>	sand hickory	PIP
<i>Castanea dentata</i>	American chestnut	PIP
<i>Castanea pumila</i> var. <i>pumila</i>	Allegheny chinkapin	PIP
<i>Catalpa speciosa</i>	northern catalpa	U
<i>Caulophyllum giganteum</i>	giant blue cohosh	U
<i>Caulophyllum thalictroides</i>	blue cohosh	PIP
<i>Ceanothus americanus</i>	new jersey tea	PIP
<i>Celastrus orbiculatus</i>	oriental bittersweet	PIP
<i>Celastrus scandens</i>	climbing bittersweet	PIP
<i>Celtis laevigata</i>	sugarberry	U
<i>Celtis occidentalis</i>	common hackberry	PIP
<i>Celtis tenuifolia</i>	dwarf hackberry	PIP
<i>Cenchrus longispinus</i>	innocent-weed	U
<i>Centaurea biebersteinii</i>	spotted knapweed	U
<i>Cephalanthus occidentalis</i>	common buttonbush	PIP
<i>Cerastium brachypodum</i>	shortstalk chickweed	PIP
<i>Cerastium fontanum</i> ssp. <i>vulgare</i>	big chickweed	PIP
<i>Cerastium glomeratum</i>	sticky chickweed	U
<i>Cerastium nutans</i> var. <i>nutans</i>		U
<i>Cercis canadensis</i> var. <i>canadensis</i>	redbud	PIP
<i>Chaenomeles speciosa</i>	flowering quince	PIP
<i>Chaerophyllum procumbens</i>	spreading chervil	PIP
<i>Chaerophyllum tainturieri</i> var. <i>tainturieri</i>	hairyfruit chervil	PIP
<i>Chamaecrista fasciculata</i> var. <i>fasciculata</i>	sleepingplant	PIP
<i>Chamaecrista nictitans</i> ssp. <i>nictitans</i> var. <i>nictitans</i>	partridge pea	PIP

Scientific Name	Common Name	Park Status ¹
<i>Chamaelirium luteum</i>	devil's-bit	PIP
<i>Chamaesyce maculata</i>	devil's-bit	PIP
<i>Chamaesyce nutans</i>	eyebane	PIP
<i>Chasmanthium latifolium</i>	Indian woodoats	PIP
<i>Cheilanthes alabamensis</i>	Alabama lipfern	PIP
<i>Cheilanthes lanosa</i>	hairy lipfern	PIP
<i>Chelone glabra</i>	white turtlehead	PIP
<i>Chelone obliqua</i>	red turtlehead	U
<i>Chelone obliqua</i> var. <i>obliqua</i>	red turtlehead	U
<i>Chenopodium album</i>	white goosefoot	PIP
<i>Chenopodium album</i> var. <i>album</i>	lambsquarters	U
<i>Chenopodium ambrosioides</i> var. <i>ambrosioides</i>	Mexican tea	PIP
<i>Chimaphila maculata</i>	spotted wintergreen	PIP
<i>Chionanthus virginicus</i>	white fringetree	U
<i>Chrysogonum virginianum</i> var. <i>australe</i>	green and gold	U
<i>Chrysopsis mariana</i>	Maryland golden aster	PIP
<i>Chrysosplenium americanum</i>	American golden saxifrage	U
<i>Cichorium intybus</i>	chicory	PIP
<i>Cicuta maculata</i> var. <i>maculata</i>	spotted water hemlock	U
<i>Cinna arundinacea</i>	stout wood reed-grass	PIP
<i>Cinna latifolia</i>	slender wood reedgrass	PIP
<i>Circaea lutetiana</i> ssp. <i>canadensis</i>	intermediate enchanter's nightshade	PIP
<i>Cirsium altissimum</i>	tall thistle	U
<i>Cirsium arvense</i>	Canadian thistle	U
<i>Cirsium discolor</i>	field thistle	PIP
<i>Cirsium muticum</i>	swamp thistle	PIP
<i>Cirsium vulgare</i>	bull thistle	PIP
<i>Cladrastis kentukea</i>	Kentucky yellowwood	U

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Claytonia caroliniana</i>	Carolina spring-beauty	PIP
<i>Claytonia caroliniana</i> var. <i>caroliniana</i>	Carolina springbeauty	U
<i>Claytonia virginica</i>	narrow-leaved spring beauty	PIP
<i>Cleistes bifaria</i>	cleistes	U
<i>Clematis catesbyana</i>	satincurls	PIP
<i>Clematis glaucophylla</i>	whiteleaf leather flower	U
<i>Clematis terniflora</i>	Japanese virgin's-bower	PIP
<i>Clematis versicolor</i>	pale leather flower	U
<i>Clematis viorna</i>	vase-vine leatherflower	PIP
<i>Clematis virginiana</i>	Virginia virgin-bower	PIP
<i>Clethra acuminata</i>	mountain pepper-bush	PIP
<i>Clinopodium vulgare</i>	field basil	PIP
<i>Clintonia umbellulata</i>	white bluebead-lily	PIP
<i>Clitoria mariana</i>	Maryland butterfly-pea	PIP
<i>Cocculus carolinus</i>	Carolina coralbead	PIP
<i>Collinsonia canadensis</i>	Canada horse-balm	PIP
<i>Comandra umbellata</i> ssp. <i>umbellata</i>		U
<i>Commelina communis</i>	Asiatic dayflower	PIP
<i>Commelina communis</i> var. <i>communis</i>	Asiatic dayflower	U
<i>Commelina communis</i> var. <i>ludens</i>	Asiatic dayflower	U
<i>Commelina diffusa</i>	climbing dayflower	U
<i>Commelina virginica</i>	Virginia dayflower	U
<i>Conium maculatum</i>	poison hemlock	U
<i>Conoclinium coelestinum</i>		PIP
<i>Conopholis americana</i>	squaw-root	PIP
<i>Convallaria majuscula</i>	convallaria	PIP
<i>Convolvulus arvensis</i>	field bindweed	PIP
<i>Conyza canadensis</i>	Canada horseweed	PIP

Scientific Name	Common Name	Park Status ¹
<i>Conyza canadensis</i> var. <i>canadensis</i>	Canadian horseweed	U
<i>Corallorrhiza maculata</i>		U
<i>Corallorrhiza odontorhiza</i>	autumn coral-root	PIP
<i>Corallorrhiza wisteriana</i>	spring coralroot	PIP
<i>Coreopsis auriculata</i>	lobed tickseed	U
<i>Coreopsis lanceolata</i>	lanceleaf tickseed	PIP
<i>Coreopsis major</i>	wood tickseed	PIP
<i>Coreopsis tripteris</i>	tall tickseed	PIP
<i>Cornus alternifolia</i>	alternate-leaf dogwood	PIP
<i>Cornus amomum</i>	silky dogwood	PIP
<i>Cornus florida</i>	flowering dogwood	PIP
<i>Cornus obliqua</i>		U
<i>Coronilla varia</i>	common crown-vetch	PIP
<i>Corydalis flavula</i>	yellow fumewort	U
<i>Corydalis sempervirens</i>	pale corydalis	PIP
<i>Corylus americana</i>	American hazelnut	PIP
<i>Crataegus calpodendron</i>	pear hawthorn	PIP
<i>Crataegus crus-galli</i>	cockspur hawthorn	U
<i>Crataegus flabellata</i>	fanleaf hawthorn	PIP
<i>Crataegus intricata</i>	Copenhagen hawthorn	U
<i>Crataegus macrosperma</i>	bigfruit hawthorn	U
<i>Crataegus pruinosa</i>	waxyfruit hawthorn	U
<i>Crataegus uniflora</i>	dwarf hawthorn	PIP
<i>Croton monanthogynus</i>	prairie tea	PIP
<i>Cruciata pedemontana</i>	piedmont bedstraw	U
<i>Cryptotaenia canadensis</i>	Canadian honewort	PIP
<i>Cunila origanoides</i>	common dittany	PIP
<i>Cuphea viscosissima</i>	blue waxweed	U
<i>Cuscuta gronovii</i>	scaldweed	PIP

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Scientific Name	Common Name	Park Status ¹
<i>Cuscuta pentagona</i> var. <i>pentagona</i>	fiveangled dodder	U
<i>Cymophyllus fraserianus</i>	Fraser's cymophyllus	U
<i>Cynanchum laeve</i>	honeysuckle	U
<i>Cynodon dactylon</i>	bermudagrass	U
<i>Cynoglossum officinale</i>	gypsyflower	U
<i>Cynoglossum virginianum</i> var. <i>virginianum</i>	wild comfrey	PIP
<i>Cyperus echinatus</i>	globe flatsedge	U
<i>Cyperus esculentus</i>	chufa flatsedge	U
<i>Cyperus flavescens</i>	yellow flatsedge	U
<i>Cyperus lancastris</i>	manyflower flatsedge	U
<i>Cyperus retrofractus</i>	rough flatsedge	PIP
<i>Cyperus retrorsus</i>	pine barren flatsedge	U
<i>Cyperus retrorsus</i> var. <i>retrorsus</i>	pine barren flatsedge	U
<i>Cyperus squarrosus</i>	bearded flatsedge	U
<i>Cyperus strigosus</i>	straw-colored flatsedge	PIP
<i>Cypripedium acaule</i>	pink lady's-slipper	PIP
<i>Cypripedium kentuckiense</i>	southern lady's-slipper	U
<i>Cypripedium parviflorum</i>	small yellow lady's-slipper	PIP
<i>Cypripedium parviflorum</i> var. <i>pubescens</i>		PIP
<i>Cypripedium reginae</i>	showy lady's slipper	U
<i>Cystopteris bulbifera</i>	bulblet fern	PIP
<i>Cystopteris protrusa</i>	lowland brittle fern	PIP
<i>Dactylis glomerata</i> ssp. <i>glomerata</i>	orchardgrass	PIP
<i>Danthonia compressa</i>	flattened oatgrass	PIP
<i>Danthonia sericea</i>	silky oatgrass	PIP
<i>Danthonia spicata</i>	poverty oatgrass	PIP
<i>Dasistoma macrophylla</i>	mullein foxglove	U
<i>Datura stramonium</i>	jimsonweed	U

Scientific Name	Common Name	Park Status ¹
<i>Daucus carota</i>	Queen Anne's lace	PIP
<i>Delphinium tricorne</i>	dwarf larkspur	PIP
<i>Dennstaedtia punctilobula</i>	eastern hay-scented fern	PIP
<i>Deparia acrostichoides</i>	silvery spleenwort	PIP
<i>Deschampsia flexuosa</i>	wavy hairgrass	PIP
<i>Descurainia pinnata</i>	western tansymustard	U
<i>Desmodium canescens</i>	hoary tick-trefoil	PIP
<i>Desmodium ciliare</i>	hairy smallleaf ticktrefoil	U
<i>Desmodium cuspidatum</i>	largebract ticktrefoil	PIP
<i>Desmodium glabellum</i>	dillenius' tick-trefoil	PIP
<i>Desmodium glutinosum</i>	large tick-trefoil	PIP
<i>Desmodium laevigatum</i>	smooth tick-trefoil	PIP
<i>Desmodium marilandicum</i>	smooth ticktrefoil	U
<i>Desmodium nudiflorum</i>	bare-stemmed tick-trefoil	PIP
<i>Desmodium obtusum</i>	stiff tick-trefoil	PIP
<i>Desmodium paniculatum</i>	narrow-leaf tick-trefoil	PIP
<i>Desmodium paniculatum</i> var. <i>paniculatum</i>	panickedleaf ticktrefoil	U
<i>Desmodium pauciflorum</i>	fewflower ticktrefoil	PIP
<i>Desmodium perplexum</i>	perplexed ticktrefoil	U
<i>Desmodium rotundifolium</i>	prostrate tick-trefoil	PIP
<i>Desmodium strictum</i>	pinebarren ticktrefoil	PIP
<i>Desmodium viridiflorum</i>	velvety tick-trefoil	PIP
<i>Dianthus armeria</i>	deptford-pink	PIP
<i>Diarrhena americana</i>	American beakgrain	PIP
<i>Dicentra canadensis</i>	squirrelcorn	U
<i>Dicentra cucullaria</i>	dutchman's breeches	U
<i>Dichanthelium acuminatum</i>	tapered rosette grass	PIP
<i>Dichanthelium acuminatum</i> var. <i>acuminatum</i>	tapered rosette grass	PIP
<i>Dichanthelium acuminatum</i> var. <i>fasciculatum</i>	western panicgrass	PIP

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Scientific Name	Common Name	Park Status ¹
<i>Dichanthelium boscii</i>	bosc's witchgrass	PIP
<i>Dichanthelium clandestinum</i>	deertongue	PIP
<i>Dichanthelium commutatum</i>	variable witchgrass	PIP
<i>Dichanthelium depauperatum</i>	starved panicgrass	U
<i>Dichanthelium dichotomum</i>	cypress witchgrass	PIP
<i>Dichanthelium dichotomum</i> var. <i>dichotomum</i>	cypress witchgrass	PIP
<i>Dichanthelium latifolium</i>	broad-leaf witchgrass	PIP
<i>Dichanthelium laxiflorum</i>	openflower rosette grass	PIP
<i>Dichanthelium linearifolium</i>	slimleaf panicum	U
<i>Dichanthelium oligosanthes</i>	Heller's rosette grass	U
<i>Dichanthelium sabulorum</i>	hemlock rosette grass	U
<i>Dichanthelium sabulorum</i> var. <i>thinium</i>	hemlock rosette grass	U
<i>Dichanthelium scoparium</i>	velvet panicum	U
<i>Dichanthelium</i> <i>sphaerocarpon</i>	roundseed panicum	PIP
<i>Dichanthelium</i> <i>sphaerocarpon</i> var. <i>isophyllum</i>	roundfruit panicgrass	PIP
<i>Dichanthelium</i> <i>sphaerocarpon</i> var. <i>sphaerocarpon</i>	roundfruit panic grass	PIP
<i>Dichanthelium villosissimum</i>	whitehair rosette grass	U
<i>Dichanthelium villosissimum</i> var. <i>villosissimum</i>	whitehair rosette grass	U
<i>Digitaria ciliaris</i>	southern crabgrass	PIP
<i>Digitaria filiformis</i>	slender crabgrass	U
<i>Digitaria ischaemum</i>	smooth crabgrass	U
<i>Diodia teres</i>	poorjoe	U
<i>Diodia teres</i> var. <i>teres</i>	poorjoe	U
<i>Diodia virginiana</i>	larger button-weed	PIP
<i>Dioscorea oppositifolia</i>	Chinese yam	PIP
<i>Dioscorea quaternata</i>	fourleaf yam	PIP

Scientific Name	Common Name	Park Status ¹
<i>Dioscorea villosa</i>	yellow yam	PIP
<i>Diospyros virginiana</i>	persimmon	PIP
<i>Diplazium pycnocarpon</i>	glade fern	PIP
<i>Dipsacus fullonum</i>	Fuller's teasel	U
<i>Dipsacus fullonum</i> ssp. <i>sylvestris</i>		PIP
<i>Dirca palustris</i>	eastern leatherwood	U
<i>Dodecatheon meadia</i>	pride of Ohio	U
<i>Doellingeria infirma</i>	cornel-leaf whitetop	PIP
<i>Doellingeria umbellata</i> var. <i>umbellata</i>		PIP
<i>Draba verna</i>	spring whitlowgrass	U
<i>Dryopteris campyloptera</i>	mountain woodfern	PIP
<i>Dryopteris carthusiana</i>	spinulose woodfern	U
<i>Dryopteris goldiana</i>	goldie's woodfern	PIP
<i>Dryopteris intermedia</i>	evergreen woodfern	PIP
<i>Dryopteris marginalis</i>	marginal wood-fern	PIP
<i>Dryopteris X triploidea</i>	triploid woodfern	U
<i>Duchesnea indica</i>	Indian mock-strawberry	PIP
<i>Dulichium arundinaceum</i>	threeway sedge	U
<i>Echinacea purpurea</i>	eastern purple coneflower	U
<i>Echinochloa crus-galli</i>	barnyard grass	PIP
<i>Echinochloa muricata</i>	rough barnyardgrass	U
<i>Echinochloa muricata</i> var. <i>microstachya</i>	rough barnyardgrass	U
<i>Echinochloa muricata</i> var. <i>muricata</i>	rough barnyardgrass	U
<i>Echium vulgare</i>	common vipersbugloss	U
<i>Eclipta prostrata</i>	false daisy	U
<i>Elaeagnus umbellata</i> var. <i>parvifolia</i>		PIP
<i>Eleocharis acicularis</i>	needle spikerush	U
<i>Eleocharis obtusa</i>	blunt spikesedge	U

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Eleocharis ovata</i>	ovate spikerush	U
<i>Eleocharis quadrangulata</i>	squarestem spikerush	U
<i>Eleocharis tenuis</i>	slender spike-rush	PIP
<i>Eleocharis tenuis var. tenuis</i>	slender spikerush	U
<i>Elephantopus carolinianus</i>	Carolina elephant-foot	PIP
<i>Elephantopus tomentosus</i>	tobaccoweed	PIP
<i>Eleusine indica</i>	Indian goosegrass	PIP
<i>Elymus canadensis</i>	nodding wild-rye	PIP
<i>Elymus hystrix</i>	bottle-brush grass	PIP
<i>Elymus hystrix var. hystrix</i>	eastern bottlebrush grass	U
<i>Elymus repens</i>		U
<i>Elymus riparius</i>	riverbank wildrye	U
<i>Elymus villosus</i>	slender wild-rye	PIP
<i>Elymus virginicus</i>	Virginia wild-rye	PIP
<i>Elymus virginicus var. virginicus</i>	Virginia wildrye	U
<i>Enemion biternatum</i>	eastern false rue anemone	U
<i>Epifagus virginiana</i>	beechnuts	PIP
<i>Epigaea repens</i>	trailing arbutus	PIP
<i>Epilobium ciliatum ssp. ciliatum</i>	coast willowweed	U
<i>Epilobium coloratum</i>	purple-leaf willow-herb	PIP
<i>Equisetum arvense</i>	field horsetail	PIP
<i>Equisetum hyemale var. affine</i>		PIP
<i>Eragrostis capillaris</i>	lace grass	U
<i>Eragrostis cilianensis</i>	stinkgrass	U
<i>Eragrostis curvula</i>	weeping lovegrass	U
<i>Eragrostis frankii</i>	sandbar lovegrass	U
<i>Eragrostis hypnoides</i>	teal lovegrass	U
<i>Eragrostis minor</i>	little lovegrass	U
<i>Eragrostis pectinacea var. pectinacea</i>		U

Scientific Name	Common Name	Park Status ¹
<i>Eragrostis pilosa</i>	Indian lovegrass	U
<i>Eragrostis spectabilis</i>	purple love-grass	PIP
<i>Erechtites hieraciifolia var. hieraciifolia</i>	American burnweed	PIP
<i>Erigenia bulbosa</i>	harbinger of spring	U
<i>Erigeron annuus</i>	white-top fleabane	PIP
<i>Erigeron philadelphicus</i>	Philadelphia fleabane	PIP
<i>Erigeron pulchellus</i>	robin plantain fleabane	PIP
<i>Erigeron pulchellus var. pulchellus</i>	robin's plantain	U
<i>Erigeron strigosus</i>	daisy fleabane	PIP
<i>Erigeron strigosus var. strigosus</i>	prairie fleabane	U
<i>Eriophorum virginicum</i>	tawny cottongrass	PIP
<i>Eryngium yuccifolium</i>	rattlesnake-master	PIP
<i>Erythronium americanum</i>	yellow trout-lily	PIP
<i>Erythronium americanum ssp. americanum</i>	American troutlily	U
<i>Euonymus americana</i>	American strawberrybush	PIP
<i>Euonymus atropurpurea</i>	eastern wahoo	PIP
<i>Euonymus fortunei var. radicans</i>	winter creeper	U
<i>Eupatorium album var. album</i>	white thoroughwort	PIP
<i>Eupatorium altissimum</i>	tall thoroughwort	U
<i>Eupatorium fistulosum</i>	hollow joe-pye weed	PIP
<i>Eupatorium perfoliatum var. perfoliatum</i>		U
<i>Eupatorium pilosum</i>	rough boneset	U
<i>Eupatorium purpureum var. purpureum</i>	sweetscented joe-pyeweed	PIP
<i>Eupatorium rotundifolium</i>	roundleaf thoroughwort	U
<i>Eupatorium rotundifolium var. ovatum</i>	hairy boneset	PIP
<i>Eupatorium serotinum</i>	late-flowering thorough-wort	PIP
<i>Eupatorium sessilifolium</i>	upland boneset	PIP

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Scientific Name	Common Name	Park Status ¹
<i>Eupatorium sessilifolium</i> var. <i>sessilifolium</i>	upland boneset	U
<i>Eupatorium steelei</i>	Steele's eupatorium	PIP
<i>Euphorbia commutata</i>	tinted woodland spurge	U
<i>Euphorbia corollata</i>	flowering spurge	PIP
<i>Euphorbia dentata</i> var. <i>dentata</i>		PIP
<i>Euphorbia mercurialina</i>	mercury spurge	PIP
<i>Euphorbia spathulata</i>	warty spurge	U
<i>Eurybia divaricata</i>	white wood aster	PIP
<i>Eurybia schreberi</i>		U
<i>Eurybia surculosa</i>		PIP
<i>Fagopyrum esculentum</i>	fagopyrum	U
<i>Fagus grandifolia</i>	American beech	PIP
<i>Festuca rubra</i>	red fescue	PIP
<i>Festuca subverticillata</i>	nodding fescue	PIP
<i>Fimbristylis autumnalis</i>	slender fimbry	U
<i>Fleischmannia incarnata</i>		PIP
<i>Forsythia viridissima</i>	forsythia	PIP
<i>Fragaria virginiana</i>	Virginia strawberry	PIP
<i>Fragaria virginiana</i> ssp. <i>virginiana</i>	Virginia strawberry	U
<i>Frangula caroliniana</i>	Carolina buckthorn	PIP
<i>Fraxinus americana</i>	white ash	PIP
<i>Fraxinus pennsylvanica</i>	green ash	PIP
<i>Fraxinus quadrangulata</i>	blue ash	U
<i>Galactia regularis</i>	eastern milkpea	U
<i>Galactia volubilis</i>	downy milkpea	PIP
<i>Galax urceolata</i>	beetleweed	PIP
<i>Galearis spectabilis</i>	showy orchis	PIP
<i>Galinsoga quadriradiata</i>	fringed quickweed	PIP
<i>Galium aparine</i>	catchweed bedstraw	PIP

Scientific Name	Common Name	Park Status ¹
<i>Galium circaezans</i>	wild licorice	PIP
<i>Galium circaezans</i> var. <i>circaezans</i>	licorice bedstraw	U
<i>Galium lanceolatum</i>	lanceleaf wild licorice	PIP
<i>Galium latifolium</i>	purple bedstraw	PIP
<i>Galium mollugo</i>	false baby's breath	U
<i>Galium pilosum</i>	hairy bedstraw	PIP
<i>Galium tinctorium</i>	stiff marsh bedstraw	PIP
<i>Galium triflorum</i>	sweet-scent bedstraw	PIP
<i>Gamochaeta purpurea</i>	spoon-leaf purple everlasting	PIP
<i>Gaultheria procumbens</i>	teaberry	PIP
<i>Gaura biennis</i>	biennial gaura	PIP
<i>Gaylussacia baccata</i>	black huckleberry	PIP
<i>Gentiana decora</i>	showy gentian	PIP
<i>Gentiana saponaria</i> var. <i>saponaria</i>		PIP
<i>Gentiana villosa</i>	striped gentian	PIP
<i>Gentianella quinquefolia</i>	agueweed	U
<i>Geranium carolinianum</i> var. <i>carolinianum</i>	Carolina geranium	PIP
<i>Geranium columbinum</i>	longstalk cranesbill	U
<i>Geranium dissectum</i>	cutleaf geranium	U
<i>Geranium maculatum</i>	wild crane's-bill	PIP
<i>Geranium molle</i>	dovefoot geranium	U
<i>Geum canadense</i> var. <i>canadense</i>	Canada avens	PIP
<i>Geum vernum</i>	spring avens	PIP
<i>Geum virginianum</i>	pale avens	PIP
<i>Ginkgo biloba</i>	maidenhair tree	PIP
<i>Glechoma hederacea</i>	ground ivy	PIP
<i>Gleditsia triacanthos</i>	honey-locust	PIP
<i>Glyceria melicaria</i>	slender manna grass	PIP
<i>Glyceria septentrionalis</i>	floating mannagrass	U

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Scientific Name	Common Name	Park Status ¹
<i>Glyceria striata</i>	fowl manna-grass	PIP
<i>Goodyera pubescens</i>	downy rattlesnake-plantain	PIP
<i>Gratiola neglecta</i>	clammy hedgehyssop	U
<i>Gratiola virginiana</i>	roundfruit hedge-hyssop	PIP
<i>Gymnocladus dioicus</i>	Kentucky coffeetree	U
<i>Hackelia virginiana</i>	beggarslice	U
<i>Hamamelis virginiana</i>	American witch-hazel	PIP
<i>Hedeoma pulegioides</i>	American false-pennyroyal	PIP
<i>Hedera helix</i>	English ivy	U
<i>Helenium autumnale</i> var. <i>autumnale</i>	common sneezeweed	PIP
<i>Helenium flexuosum</i>	purple-head sneezeweed	PIP
<i>Helianthemum canadense</i>	longbranch frostweed	U
<i>Helianthus atrorubens</i>	purple-disk sunflower	PIP
<i>Helianthus decapetalus</i>	thin-leaved sunflower	PIP
<i>Helianthus divaricatus</i>	woodland sunflower	PIP
<i>Helianthus giganteus</i>	giant sunflower	U
<i>Helianthus hirsutus</i>	stiff-hair sunflower	PIP
<i>Helianthus laevigatus</i>	smooth sunflower	PIP
<i>Helianthus maximiliani</i>	Maximilian sunflower	U
<i>Helianthus microcephalus</i>	small wood sunflower	PIP
<i>Helianthus strumosus</i>	paleleaf woodland sunflower	U
<i>Helianthus tuberosus</i>	Jerusalem artichoke	PIP
<i>Heliopsis helianthoides</i>	ox-eye	PIP
<i>Heliopsis helianthoides</i> var. <i>helianthoides</i>	smooth oxeye	U
<i>Hemerocallis fulva</i>	orange daylily	PIP
<i>Hepatica nobilis</i>	liverwort	U
<i>Hepatica nobilis</i> var. <i>acuta</i>	sharp-lobed hepatica	PIP
<i>Hepatica nobilis</i> var. <i>obtusata</i>	roundlobed hepatica	PIP
<i>Heracleum maximum</i>	common cowparsnip	U

Scientific Name	Common Name	Park Status ¹
<i>Hesperis matronalis</i>	dames rocket	PIP
<i>Heuchera americana</i>	American alumroot	PIP
<i>Heuchera americana</i> var. <i>americana</i>	American alumroot	U
<i>Heuchera longiflora</i>	longflower alumroot	U
<i>Heuchera parviflora</i>	little-leaved alumroot	PIP
<i>Heuchera parviflora</i> var. <i>parviflora</i>	littleflower alumroot	U
<i>Heuchera pubescens</i>	downy alumroot	PIP
<i>Heuchera villosa</i> var. <i>villosa</i>	hairy alumroot	PIP
<i>Hexalectris spicata</i>	crested coralroot	PIP
<i>Hexastylis arifolia</i>	little brown jug	PIP
<i>Hexastylis arifolia</i> var. <i>ruthii</i>	Ruth's littlebrownjug	U
<i>Hexastylis contracta</i>	mountain heartleaf	PIP
<i>Hexastylis heterophylla</i>	variable-leaved heartleaf	PIP
<i>Hexastylis virginica</i>	Virginia heartleaf	U
<i>Hibiscus syriacus</i>	rose-of-sharon	PIP
<i>Hibiscus trionum</i>	flower of an hour	U
<i>Hieracium caespitosum</i>	meadow hawkweed	PIP
<i>Hieracium gronovii</i>	hairy hawkweed	PIP
<i>Hieracium paniculatum</i>	panicled hawkweed	PIP
<i>Hieracium scabrum</i>	rough hawkweed	PIP
<i>Hieracium venosum</i>	rattlesnake hawkweed	PIP
<i>Holcus lanatus</i>	common velvetgrass	U
<i>Holosteum umbellatum</i>	jagged chickweed	U
<i>Houstonia caerulea</i>	azure bluets	PIP
<i>Houstonia canadensis</i>	Canadian summer bluet	PIP
<i>Houstonia longifolia</i>	longleaf bluet	PIP
<i>Houstonia purpurea</i>	purple bluet	PIP
<i>Houstonia purpurea</i> var. <i>calycosa</i>	Venus' pride	U
<i>Houstonia purpurea</i> var. <i>purpurea</i>	Venus' pride	U

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Houstonia serpyllifolia</i>	thymeleaf bluet	U
<i>Humulus lupulus</i>	common hop	U
<i>Humulus lupulus var. lupuloides</i>	common hop	U
<i>Huperzia lucidula</i>	shining clubmoss	PIP
<i>Huperzia porophila</i>	rock clubmoss	PIP
<i>Hybanthus concolor</i>	green violet	PIP
<i>Hydrangea arborescens</i>	wild hydrangea	PIP
<i>Hydrastis canadensis</i>	golden-seal	PIP
<i>Hydrophyllum canadense</i>	bluntleaf waterleaf	PIP
<i>Hydrophyllum macrophyllum</i>	largeleaf waterleaf	PIP
<i>Hydrophyllum virginianum</i>	Shawnee salad	PIP
<i>Hypericum canadense</i>	lesser Canadian St. Johnswort	U
<i>Hypericum densiflorum</i>	bushy St. Johnswort	U
<i>Hypericum dolabriforme</i>	straggling St. Johnswort	U
<i>Hypericum drummondii</i>	nits and lice	U
<i>Hypericum frondosum</i>	cedarglade St. Johnswort	U
<i>Hypericum gentianoides</i>	orange-grass st. john's-wort	PIP
<i>Hypericum hypericoides</i>	St. Andrews cross	U
<i>Hypericum hypericoides ssp. hypericoides</i>	St. Andrew's cross	PIP
<i>Hypericum hypericoides ssp. multicaule</i>	St. Andrew's cross	PIP
<i>Hypericum mutilum</i>	slender st. john's-wort	PIP
<i>Hypericum prolificum</i>	shrubby St. Johnswort	U
<i>Hypericum punctatum</i>	common St. John's-wort	PIP
<i>Hypochaeris radicata</i>	hairy catsear	U
<i>Hypoxis hirsuta</i>	eastern yellow stargrass	PIP
<i>Ilex ambigua</i>	Carolina holly	PIP
<i>Ilex decidua</i>	possumhaw	PIP
<i>Ilex montana</i>	mountain holly	PIP
<i>Ilex opaca var. opaca</i>	American holly	PIP

Scientific Name	Common Name	Park Status ¹
<i>Impatiens capensis</i>	spotted jewel-weed	PIP
<i>Impatiens pallida</i>	pale jewel-weed	PIP
<i>Ionactis linariifolius</i>	flaxleaf aster	PIP
<i>Ipomoea coccinea</i>	redstar	U
<i>Ipomoea hederacea</i>	ivyleaf morning-glory	PIP
<i>Ipomoea lacunosa</i>	whitestar	U
<i>Ipomoea pandurata</i>	big-root morning-glory	PIP
<i>Ipomoea purpurea</i>	tall morning-glory	PIP
<i>Iris cristata</i>	crested dwarf iris	PIP
<i>Iris pseudacorus</i>	paleyellow iris	U
<i>Iris verna</i>	dwarf violet iris	U
<i>Iris verna var. smalliana</i>	dwarf violet iris	U
<i>Iris virginica</i>	Virginia iris	U
<i>Iris virginica var. shrevei</i>	Shreve's iris	U
<i>Isanthus brachiatus</i>		PIP
<i>Isoetes engelmannii</i>	Appalachian quillwort	U
<i>Isotria verticillata</i>	large whorled pogonia	PIP
<i>Itea virginica</i>	Virginia sweetspire	U
<i>Jeffersonia diphylla</i>	twinleaf	U
<i>Juglans cinerea</i>	butternut	PIP
<i>Juglans nigra</i>	black walnut	PIP
<i>Juncus acuminatus</i>	tapertip rush	U
<i>Juncus biflorus</i>	bog rush	U
<i>Juncus brachycephalus</i>	smallhead rush	U
<i>Juncus coriaceous</i>	leathery rush	PIP
<i>Juncus debilis</i>	weak rush	PIP
<i>Juncus diffusissimus</i>	slimpod rush	U
<i>Juncus dudleyi</i>	Dudley's rush	U
<i>Juncus effusus</i>	soft rush	PIP
<i>Juncus effusus var. pylaei</i>	common rush	U

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Juncus effusus</i> var. <i>solutus</i>	lamp rush	U
<i>Juncus interior</i>	inland rush	PIP
<i>Juncus marginatus</i>	grassleaf rush	U
<i>Juncus secundus</i>	lopsided rush	U
<i>Juncus subcaudatus</i>	woods-rush	PIP
<i>Juncus tenuis</i>	slender rush	PIP
<i>Juniperus virginiana</i> var. <i>virginiana</i>		PIP
<i>Justicia americana</i>	American waterwillow	U
<i>Kalmia latifolia</i>	mountain laurel	PIP
<i>Krigia biflora</i>	two-flowered dwarf dandelion	PIP
<i>Krigia virginica</i>	dwarf dandelion	PIP
<i>Kummerowia stipulacea</i>	Korean clover	PIP
<i>Kummerowia striata</i>	common korean-clover	PIP
<i>Kyllinga gracillima</i>	spikesedge	PIP
<i>Kyllinga pumila</i>	low spikesedge	U
<i>Lactuca biennis</i>	tall blue lettuce	U
<i>Lactuca canadensis</i>	Canada lettuce	PIP
<i>Lactuca floridana</i>	woodland lettuce	PIP
<i>Lactuca floridana</i> var. <i>floridana</i>	woodland lettuce	U
<i>Lactuca saligna</i>	willowleaf lettuce	PIP
<i>Lactuca serriola</i>	prickly lettuce	U
<i>Lamium amplexicaule</i>	common deadnettle	PIP
<i>Lamium purpureum</i>	purple deadnettle	PIP
<i>Lamium purpureum</i> var. <i>purpureum</i>	purple deadnettle	U
<i>Laportea canadensis</i>	wood nettle	PIP
<i>Lapsana communis</i>	common nipplewort	U
<i>Lathyrus latifolius</i>	broad-leaf peavine	PIP
<i>Lathyrus venosus</i>	smooth veiny peavine	PIP
<i>Lechea minor</i>	thymeleaf pinweed	U

Scientific Name	Common Name	Park Status ¹
<i>Lechea racemulosa</i>	Illinois pinweed	PIP
<i>Leersia oryzoides</i>	rice cutgrass	U
<i>Leersia virginica</i>	Virginia cutgrass	PIP
<i>Lemna minor</i>	lesser duckweed	PIP
<i>Leonurus cardiaca</i>	common motherwort	U
<i>Lepidium campestre</i>	field pepperweed	PIP
<i>Lepidium virginicum</i> var. <i>virginicum</i>	Virginia pepperweed	PIP
<i>Lespedeza bicolor</i>	shrubby lespedeza	U
<i>Lespedeza cuneata</i>	Chinese lespedeza	PIP
<i>Lespedeza frutescens</i>	wand bush-clover	PIP
<i>Lespedeza hirta</i>	hairy bush-clover	PIP
<i>Lespedeza hirta</i> ssp. <i>hirta</i>	hairy lespedeza	U
<i>Lespedeza procumbens</i>	trailing bush-clover	PIP
<i>Lespedeza repens</i>	creeping bush-clover	PIP
<i>Lespedeza thunbergii</i>	Thunberg's lespedeza	U
<i>Lespedeza violacea</i>	violet lespedeza	PIP
<i>Lespedeza virginica</i>	slender lespedeza	PIP
<i>Leucanthemum vulgare</i>	oxeye daisy	PIP
<i>Leucothoe fontanesiana</i>	highland doghobble	U
<i>Liatris aspera</i>	tall gay-feather	PIP
<i>Liatris spicata</i>	dense gayfeather	U
<i>Liatris squarrosa</i>	scaly gayfeather	U
<i>Ligusticum canadense</i>	lovage	PIP
<i>Ligustrum amurense</i>	amur privet	PIP
<i>Ligustrum obtusifolium</i>	border privet	U
<i>Ligustrum sinense</i>	Chinese privet	PIP
<i>Ligustrum vulgare</i>	European privet	U
<i>Lilium canadense</i>	Canada lily	PIP
<i>Lilium canadense</i> ssp. <i>canadense</i>	Canadian lily	U

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Lilium philadelphicum</i>	wood lily	U
<i>Lilium superbum</i>	turkscap lily	U
<i>Linaria vulgaris</i>	butter and eggs	U
<i>Lindera benzoin</i>	spicebush	PIP
<i>Lindernia dubia</i>	moistbank pimpernel	U
<i>Lindernia dubia var. dubia</i>	yellowseed false pimpernel	U
<i>Linum medium var. texanum</i>	stiff yellow flax	U
<i>Linum striatum</i>	ridged yellow flax	U
<i>Linum sulcatum var. sulcatum</i>		U
<i>Linum usitatissimum</i>	common flax	PIP
<i>Linum virginianum</i>	Virginia flax	PIP
<i>Liparis liliifolia</i>	large twayblade	PIP
<i>Liparis loeselii</i>	yellow widelip orchid	U
<i>Liquidambar styraciflua</i>	sweet gum	PIP
<i>Liriodendron tulipifera</i>	tulip tree	PIP
<i>Listera smallii</i>	kidney-leaf twayblade	PP
<i>Lithospermum canescens</i>	hoary puccoon	PIP
<i>Lithospermum latifolium</i>	American gromwell	PIP
<i>Lobelia cardinalis</i>	cardinal flower	PIP
<i>Lobelia inflata</i>	Indian-tobacco	PIP
<i>Lobelia puberula</i>	downy lobelia	PIP
<i>Lobelia puberula var. simulans</i>	downy lobelia	U
<i>Lobelia siphilitica var. siphilitica</i>		PIP
<i>Lobelia spicata</i>	pale-spiked lobelia	PIP
<i>Lolium arundinaceum</i>	tall fescue	PIP
<i>Lolium perenne</i>	perennial ryegrass	PIP
<i>Lolium perenne ssp. multiflorum</i>	perennial ryegrass	PIP
<i>Lolium perenne ssp. perenne</i>	perennial ryegrass	U
<i>Lolium pratense</i>		U

Scientific Name	Common Name	Park Status ¹
<i>Lonicera dioica</i>	limber honeysuckle	PIP
<i>Lonicera japonica</i>	Japanese honeysuckle	PIP
<i>Lonicera maackii</i>	amur honeysuckle	PIP
<i>Lonicera sempervirens</i>	trumpet honeysuckle	U
<i>Lotus corniculatus</i>	birdfood deervetch	PIP
<i>Ludwigia alternifolia</i>	bushy seedbox	PIP
<i>Ludwigia decurrens</i>	wingleaf primrosewillow	U
<i>Ludwigia palustris</i>	marsh seedbox	U
<i>Luzula acuminata</i>	hairy woodrush	PIP
<i>Luzula acuminata var. carolinae</i>	Carolina woodrush	U
<i>Luzula bulbosa</i>	southern woodrush	PIP
<i>Luzula echinata</i>	wood rush	PIP
<i>Luzula multiflora</i>	common woodrush	U
<i>Lycopodiella inundata</i>	inundated clubmoss	U
<i>Lycopodiella X brucei</i>	Bruce's clubmoss	U
<i>Lycopodium clavatum</i>	running clubmoss	PIP
<i>Lycopodium digitatum</i>	shining clubmoss	PIP
<i>Lycopodium obscurum</i>	tree clubmoss	PIP
<i>Lycopodium tristachyum</i>	deep-root clubmoss	PIP
<i>Lycopodium X habereri</i>	Haberer's clubmoss	U
<i>Lycopus americanus</i>	American waterhorehound	U
<i>Lycopus virginicus</i>	Virginia bugleweed	PIP
<i>Lygodium palmatum</i>	climbing fern	PIP
<i>Lyonia ligustrina</i>	maleberry	PIP
<i>Lyonia ligustrina var. ligustrina</i>	maleberry	U
<i>Lysimachia ciliata</i>	fringed loosestrife	U
<i>Lysimachia lanceolata</i>	lanceleaf loosestrife	U
<i>Lysimachia nummularia</i>	creeping jenny	U
<i>Lysimachia quadrifolia</i>	whorled loosestrife	PIP

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Lysimachia tonsa</i>	southern loosestrife	PIP
<i>Magnolia acuminata</i>	cucumber magnolia	PIP
<i>Magnolia fraseri</i>	Fraser magnolia	PIP
<i>Magnolia macrophylla</i>	bigleaf magnolia	PIP
<i>Magnolia tripetala</i>	umbrella magnolia	PIP
<i>Maianthemum canadense</i>	false lily-of-the-valley	PIP
<i>Maianthemum racemosum</i> <i>ssp. racemosum</i>	false Solomon's-seal	PIP
<i>Malaxis unifolia</i>	green adder's-mouth	PIP
<i>Malus angustifolia</i>	southern crabapple	PIP
<i>Malus angustifolia var.</i> <i>angustifolia</i>	southern crabapple	U
<i>Malus coronaria</i>	sweet crabapple	U
<i>Malus pumila</i>	apple	PIP
<i>Malva moschata</i>	musk mallow	U
<i>Malva neglecta</i>	common mallow	PIP
<i>Manfreda virginica</i>	false aloe	U
<i>Marrubium vulgare</i>	common hoarhound	PIP
<i>Matelea obliqua</i>	climbing milkvine	U
<i>Medeola virginiana</i>	Indian cucumber-root	PIP
<i>Medicago lupulina</i>	black medick	PIP
<i>Medicago sativa</i>	alfalfa	U
<i>Medicago sativa ssp. sativa</i>	alfalfa	U
<i>Meehania cordata</i>	Meehan's mint	U
<i>Melampyrum lineare</i>	American cow-wheat	PIP
<i>Melampyrum lineare var.</i> <i>latifolium</i>	American cowwheat	PIP
<i>Melanthium parviflorum</i>	small-flowered false helleborne	PIP
<i>Melica mutica</i>	twoflower melicgrass	U
<i>Melilotus officinalis</i>	yellow sweetclover	PIP
<i>Menispermum canadense</i>	Canada moonseed	PIP
<i>Mentha suaveolens</i>	apple mint	U

Scientific Name	Common Name	Park Status ¹
<i>Mentha X piperita</i>	peppermint	U
<i>Mertensia virginica</i>	Virginia bluebells	U
<i>Microstegium vimineum</i>	Nepalese browntop	PIP
<i>Microthlaspi perfoliatum</i>		U
<i>Mimulus alatus</i>	sharp-wing monkeyflower	PIP
<i>Mimulus ringens var. ringens</i>	Allegheny monkeyflower	U
<i>Minuartia glabra</i>	Appalachian sandwort	PIP
<i>Minuartia patula</i>	pitcher's stitchwort	U
<i>Miscanthus sinensis</i>	Chinese silvergrass	PIP
<i>Mitchella repens</i>	partridge-berry	PIP
<i>Mitella diphylla</i>	two-leaf bishop's-cap	PIP
<i>Mollugo verticillata</i>	green carpet-weed	PIP
<i>Monarda clinopodia</i>	basil bee-balm	PIP
<i>Monarda fistulosa</i>	wild bergamot	PIP
<i>Monotropa hypopithys</i>	American pinesap	PIP
<i>Monotropa uniflora</i>	Indian-pipe	PIP
<i>Monotropsis odorata</i>	sweet pinesap	U
<i>Morus rubra var. rubra</i>	red mulberry	PIP
<i>Muhlenbergia capillaris</i>	hairawn muhly	U
<i>Muhlenbergia frondosa</i>	wirestem muhly	PIP
<i>Muhlenbergia schreberi</i>	schreber muhly	PIP
<i>Muhlenbergia sobolifera</i>	cliff muhly	PIP
<i>Muhlenbergia sylvatica</i>	woodland muhly	U
<i>Muhlenbergia tenuiflora</i>	slender muhly	PIP
<i>Murdannia keisak</i>	wartremoving herb	U
<i>Myosotis arvensis</i>	field forget-me-not	PIP
<i>Myosotis macrosperma</i>	largeseed forget-me-not	PIP
<i>Myosotis scorpioides</i>	true forget me not	U
<i>Myosotis verna</i>	spring forget-me-not	PIP
<i>Najas guadalupensis ssp.</i> <i>guadalupensis</i>		U

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Scientific Name	Common Name	Park Status ¹
<i>Narcissus poeticus</i>	poet's narcissus	U
<i>Nepeta cataria</i>	catnip	U
<i>Nicandra physalodes</i>	apple of Peru	U
<i>Nyssa biflora</i>	swamp tupelo	PIP
<i>Nyssa sylvatica</i>	black gum	PIP
<i>Obolaria virginica</i>	Virginia pennywort	PIP
<i>Oclemena acuminata</i>	whorled wood aster	PIP
<i>Oenothera biennis</i>	common evening-primrose	PIP
<i>Oenothera laciniata</i>	cutleaf eveningprimrose	U
<i>Oenothera pilosella</i>	meadow eveningprimrose	U
<i>Oenothera speciosa</i>	pinkladies	U
<i>Oligoneuron rigidum</i> var. <i>rigidum</i>		PIP
<i>Onoclea sensibilis</i>	sensitive fern	PIP
<i>Ophioglossum engelmannii</i>	limestone adderstongue	U
<i>Ophioglossum pusillum</i>	northern adderstongue	U
<i>Ophioglossum vulgatum</i>		PIP
<i>Opuntia humifusa</i>	pricklypear	U
<i>Opuntia humifusa</i> var. <i>humifusa</i>	pricklypear	U
<i>Orbexilum onobrychis</i>	frenchgrass	U
<i>Orobanche uniflora</i>	one-flowered broomrape	PIP
<i>Orontium aquaticum</i>	goldenclub	U
<i>Osmorhiza claytonii</i>	hairy sweet-cicely	PIP
<i>Osmorhiza longistylis</i>	smoother sweet-cicely	PIP
<i>Osmunda cinnamomea</i>	cinnamon fern	PIP
<i>Osmunda cinnamomea</i> var. <i>cinnamomea</i>	cinnamon fern	U
<i>Osmunda claytoniana</i>	interrupted fern	PIP
<i>Osmunda regalis</i> var. <i>spectabilis</i>	royal fern	PIP
<i>Ostrya virginiana</i>	eastern hop-hornbeam	PIP
<i>Oxalis grandis</i>	great yellow wood-sorrel	PIP

Scientific Name	Common Name	Park Status ¹
<i>Oxalis montana</i>	white wood-sorrel	PIP
<i>Oxalis stricta</i>	upright yellow wood-sorrel	PIP
<i>Oxalis violacea</i>	violet wood-sorrel	PIP
<i>Oxydendrum arboreum</i>	sourwood	PIP
<i>Oxypolis rigidior</i>	stiff cowbane	PIP
<i>Packera anonyma</i>	Small's ragwort	PIP
<i>Packera aurea</i>		PIP
<i>Packera millefolia</i>		U
<i>Packera obovata</i>	roundleaf ragwort	PIP
<i>Packera plattensis</i>		U
<i>Panax quinquefolius</i>	American ginseng	PIP
<i>Panicum anceps</i>	beaked panic grass	PIP
<i>Panicum capillare</i>	common panic grass	PIP
<i>Panicum dichotomiflorum</i>	fall panic grass	PIP
<i>Panicum dichotomiflorum</i> var. <i>dichotomiflorum</i>	fall panicgrass	U
<i>Panicum flexile</i>	wiry panicgrass	U
<i>Panicum gattingeri</i>	Gattinger's panic grass	PIP
<i>Panicum philadelphicum</i>	Philadelphia panicgrass	U
<i>Panicum rigidulum</i>	redtop panicgrass	U
<i>Panicum rigidulum</i> var. <i>elongatum</i>	redtop panicgrass	U
<i>Panicum rigidulum</i> var. <i>rigidulum</i>	redtop panicum	U
<i>Panicum verrucosum</i>	warty panicgrass	U
<i>Parietaria pensylvanica</i>	Pennsylvania pellitory	U
<i>Parnassia grandifolia</i>	largeleaf grass of Parnassus	U
<i>Paronychia argyrocoma</i>	silvery nailwort	PIP
<i>Paronychia canadensis</i>	forked nailwort	PIP
<i>Parthenocissus quinquefolia</i>	Virginia creeper	PIP
<i>Paspalum dilatatum</i>	dallisgrass	PIP
<i>Paspalum laeve</i>	field paspalum	U

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Paspalum pubiflorum</i>	hairy-seed paspalum	PIP
<i>Paspalum setaceum</i>	thin paspalum	PIP
<i>Passiflora incarnata</i>	purple passionflower	U
<i>Passiflora lutea</i>	yellow passionflower	PIP
<i>Pastinaca sativa</i>	wild parsnip	U
<i>Paulownia tomentosa</i>	princess tree	PIP
<i>Pedicularis canadensis ssp. canadensis</i>	Canadian lousewort	PIP
<i>Pellaea atropurpurea</i>	purple-stem cliff-brake	PIP
<i>Pennisetum glaucum</i>		PIP
<i>Penstemon calycosus</i>	longsepal beardtongue	PIP
<i>Penstemon canescens</i>	gray beardtongue	PIP
<i>Penstemon digitalis</i>	talus slope penstemon	PIP
<i>Penstemon laevigatus</i>	eastern smooth beardtongue	U
<i>Penstemon pallidus</i>	pale beardtongue	PIP
<i>Penthorum sedoides</i>	ditch stonecrop	U
<i>Perilla frutescens</i>	beef-steak plant	PIP
<i>Perilla frutescens var. frutescens</i>	beefsteakplant	U
<i>Phacelia bipinnatifida</i>	fernleaf phacelia	PIP
<i>Phacelia purshii</i>	Miami-mist	PIP
<i>Phalaris arundinacea</i>	reed canarygrass	U
<i>Phaseolus polystachios</i>	wild kidney bean	PIP
<i>Phegopteris hexagonoptera</i>	broad beech fern	PIP
<i>Philadelphus hirsutus</i>	streambank mock-orange	PIP
<i>Phleum pratense</i>	meadow timothy	PIP
<i>Phlox amplifolia</i>	large-leaved phlox	PIP
<i>Phlox carolina</i>	thick-leaved phlox	PIP
<i>Phlox divaricata</i>	wild blue phlox	PIP
<i>Phlox divaricata ssp. divaricata</i>	wild blue phlox	U
<i>Phlox glaberrima</i>	smooth phlox	U

Scientific Name	Common Name	Park Status ¹
<i>Phlox maculata</i>	spotted phlox	PIP
<i>Phlox maculata ssp. pyramidalis</i>	wild sweetwilliam	U
<i>Phlox paniculata</i>	fall phlox	PIP
<i>Phlox stolonifera</i>	creeping phlox	U
<i>Phoradendron leucarpum</i>	American mistletoe	PIP
<i>Photinia melanocarpa</i>	black chokeberry	PIP
<i>Phryma leptostachya</i>	lopseed	PIP
<i>Phyllanthus caroliniensis ssp. caroliniensis</i>		U
<i>Physalis heterophylla var. heterophylla</i>	clammy groundcherry	PIP
<i>Physalis longifolia</i>	longleaf groundcherry	U
<i>Physalis longifolia var. subglabrata</i>	longleaf groundcherry	U
<i>Physalis virginiana var. virginiana</i>	Virginia groundcherry	PIP
<i>Physocarpus opulifolius var. opulifolius</i>		U
<i>Physostegia virginiana</i>	obedient-plant	PIP
<i>Physostegia virginiana ssp. praemorsa</i>	obedient plant	U
<i>Physostegia virginiana ssp. virginiana</i>	obedient plant	U
<i>Phytolacca americana</i>	common pokeweed	PIP
<i>Pilea pumila</i>	Canada clearweed	PIP
<i>Pilea pumila var. pumila</i>	Canadian clearweed	U
<i>Pinus echinata</i>	Arkansas pine	PIP
<i>Pinus rigida</i>	pitch pine	PIP
<i>Pinus strobus</i>	white pine	U
<i>Pinus virginiana</i>	Virginia pine	PIP
<i>Piptochaetium avenaceum</i>	blackseed needlegrass	U
<i>Pityopsis graminifolia var. graminifolia</i>	silkgrass	PIP
<i>Pityopsis graminifolia var. latifolia</i>	narrowleaf silkgrass	PIP

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

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Scientific Name	Common Name	Park Status ¹
<i>Plantago lanceolata</i>	English plantain	PIP
<i>Plantago major</i>	great plantain	PIP
<i>Plantago rugelii</i>	black-seed plantain	PIP
<i>Plantago rugelii</i> var. <i>rugelii</i>	Rugel's plantain	U
<i>Plantago virginica</i>	pale-seeded plantain	PIP
<i>Platanthera ciliaris</i>	yellow fringed orchid	PIP
<i>Platanthera clavellata</i>	small green woodland orchid	PIP
<i>Platanthera flava</i>	pale green orchid	PIP
<i>Platanthera flava</i> var. <i>flava</i>	palegreen orchid	U
<i>Platanthera flava</i> var. <i>herbiola</i>	palegreen orchid	U
<i>Platanthera lacera</i>	green fringed orchid	PIP
<i>Platanthera psycodes</i>	lesser purple fringed orchid	U
<i>Platanus occidentalis</i>	sycamore	PIP
<i>Pleopeltis polypodioides</i> ssp. <i>michauxiana</i>	resurrection fern	PIP
<i>Pluchea camphorata</i>	camphor pluchea	U
<i>Poa alsodes</i>	grove bluegrass	PIP
<i>Poa annua</i>	annual bluegrass	PIP
<i>Poa autumnalis</i>	autumn bluegrass	PIP
<i>Poa compressa</i>	Canada bluegrass	PIP
<i>Poa cuspidata</i>	early bluegrass	PIP
<i>Poa pratensis</i>	Kentucky bluegrass	PIP
<i>Poa sylvestris</i>	woodland bluegrass	PIP
<i>Poa trivialis</i>	rough bluegrass	PIP
<i>Podophyllum peltatum</i>	may apple	PIP
<i>Podostemum ceratophyllum</i>	hornleaf riverweed	U
<i>Polygala cruciata</i>	drumheads	U
<i>Polygala cruciata</i> var. <i>cruciata</i>	drumheads	U
<i>Polygala curtissii</i>	Curtiss' milkwort	U
<i>Polygala sanguinea</i>	field milkwort	PIP

Scientific Name	Common Name	Park Status ¹
<i>Polygala senega</i>	seneca snakeroot	PIP
<i>Polygala verticillata</i> var. <i>verticillata</i>	whorled milkwort	U
<i>Polygonatum biflorum</i> var. <i>commutatum</i>		PIP
<i>Polygonatum pubescens</i>	hairy Solomon's seal	U
<i>Polygonum arifolium</i>	halberd-leaf tearthumb	PIP
<i>Polygonum aviculare</i>	prostrate knotweed	PIP
<i>Polygonum caespitosum</i> var. <i>longisetum</i>	oriental ladythumb	PIP
<i>Polygonum convolvulus</i>	black bindweed	PIP
<i>Polygonum cuspidatum</i>	Japanese knotweed	PIP
<i>Polygonum erectum</i>	erect knotweed	U
<i>Polygonum hydropiperoides</i>	swamp smartweed	U
<i>Polygonum pensylvanicum</i>	Pennsylvania smartweed	PIP
<i>Polygonum persicaria</i>	lady's thumb	PIP
<i>Polygonum punctatum</i>	dotted smartweed	PIP
<i>Polygonum punctatum</i> var. <i>confertiflorum</i>	dotted smartweed	U
<i>Polygonum sagittatum</i>	arrow-leaved tearthumb	PIP
<i>Polygonum scandens</i>	climbing false-buckwheat	PIP
<i>Polygonum scandens</i> var. <i>cristatum</i>	climbing false buckwheat	U
<i>Polygonum scandens</i> var. <i>scandens</i>	climbing false buckwheat	U
<i>Polygonum setaceum</i>	bog smartweed	U
<i>Polygonum virginianum</i>	Virginia knotweed	PIP
<i>Polymnia canadensis</i>	white-flower leafcup	PIP
<i>Polypodium appalachianum</i>	Appalachian polypody	U
<i>Polypodium virginianum</i>	rock polypody	PIP
<i>Polystichum acrostichoides</i> var. <i>acrostichoides</i>	Christmas fern	PIP
<i>Populus alba</i>	white poplar	U
<i>Porteranthus trifolius</i>	bowman's-root	PIP

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

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Scientific Name	Common Name	Park Status ¹
<i>Portulaca oleracea</i>	little hogweed	U
<i>Potamogeton diversifolius</i>	waterthread pondweed	U
<i>Potamogeton illinoensis</i>	Illinois pondweed	U
<i>Potamogeton pusillus</i>	small pondweed	U
<i>Potentilla canadensis</i>	Canada cinquefoil	PIP
<i>Potentilla canadensis var. villosissima</i>	dwarf cinquefoil	U
<i>Potentilla norvegica ssp. monspeliensis</i>	Norwegian cinquefoil	PIP
<i>Potentilla recta</i>	sulphur cinquefoil	PIP
<i>Potentilla simplex</i>	old-field cinquefoil	PIP
<i>Prenanthes alba</i>	white rattlesnakeroot	U
<i>Prenanthes altissima</i>	tall rattlesnake-root	PIP
<i>Prenanthes serpentaria</i>	cankerweed	PIP
<i>Prenanthes trifoliolata</i>	gall of the earth	PIP
<i>Prosartes lanuginosa</i>		PIP
<i>Prosartes maculata</i>		PIP
<i>Prunella vulgaris</i>	self-heal	PIP
<i>Prunella vulgaris ssp. lanceolata</i>	lance selfheal	U
<i>Prunus americana</i>	American plum	PIP
<i>Prunus angustifolia var. angustifolia</i>		PIP
<i>Prunus mahaleb</i>	Mahaleb cherry	U
<i>Prunus persica</i>	peach	PIP
<i>Prunus serotina var. serotina</i>	black cherry	PIP
<i>Prunus virginiana</i>	common chokecherry	U
<i>Pseudognaphalium helleri</i>		U
<i>Pseudognaphalium helleri ssp. micradenium</i>		U
<i>Pseudognaphalium obtusifolium</i>	rabbit tobacco	PIP
<i>Pseudognaphalium obtusifolium ssp. obtusifolium</i>		PIP

Scientific Name	Common Name	Park Status ¹
<i>Ptelea trifoliata</i>	wafer-ash	PIP
<i>Ptelea trifoliata ssp. trifoliata var. mollis</i>	wafer-ash	PIP
<i>Pteridium aquilinum</i>	bracken fern	PIP
<i>Pteridium aquilinum var. latiusculum</i>	western brackenfern	U
<i>Pueraria montana var. lobata</i>	kudzu	PIP
<i>Pycnanthemum incanum</i>	hoary mountain-mint	PIP
<i>Pycnanthemum incanum var. incanum</i>	hoary mountainmint	U
<i>Pycnanthemum loomisii</i>	Loomis' mountainmint	U
<i>Pycnanthemum montanum</i>	thinleaf mountainmint	U
<i>Pycnanthemum pycnanthemoides</i>	southern mountain-mint	PIP
<i>Pycnanthemum pycnanthemoides var. pycnanthemoides</i>	southern mountainmint	U
<i>Pycnanthemum tenuifolium</i>	narrowleaf mountainmint	U
<i>Pycnanthemum verticillatum</i>	whorled mountainmint	U
<i>Pyrrhopappus carolinianus</i>	Carolina false-dandelion	PIP
<i>Pyricularia pubera</i>	buffalo-nut	PIP
<i>Pyrus communis</i>	common pear	PIP
<i>Quercus alba</i>	white oak	PIP
<i>Quercus coccinea</i>	scarlet oak	PIP
<i>Quercus coccinea var. coccinea</i>	scarlet oak	U
<i>Quercus falcata</i>	southern red oak	PIP
<i>Quercus marilandica</i>	blackjack oak	PIP
<i>Quercus muehlenbergii</i>	chinkapin oak	PIP
<i>Quercus nigra</i>	water oak	U
<i>Quercus phellos</i>	willow oak	PIP
<i>Quercus prinus</i>	chestnut oak	PIP
<i>Quercus rubra</i>	northern red oak	PIP
<i>Quercus rubra var. rubra</i>	northern red oak	U

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Quercus shumardii</i>	shumard oak	U
<i>Quercus stellata</i>	post oak	PIP
<i>Quercus velutina</i>	black oak	PIP
<i>Ranunculus abortivus</i>	kidney-leaved buttercup	PIP
<i>Ranunculus acris</i>	tall butter-cup	PIP
<i>Ranunculus allegheniensis</i>	Allegheny mountain buttercup	PIP
<i>Ranunculus ambigens</i>	waterplantain spearwort	U
<i>Ranunculus bulbosus</i>	bulbous buttercup	PIP
<i>Ranunculus fascicularis</i>	early buttercup	U
<i>Ranunculus hispidus</i>	hispid buttercup	PIP
<i>Ranunculus hispidus var. caricetorum</i>	bristly buttercup	U
<i>Ranunculus hispidus var. hispidus</i>	bristly buttercup	PIP
<i>Ranunculus hispidus var. nitidus</i>	bristly buttercup	U
<i>Ranunculus recurvatus</i>	blisterwort	PIP
<i>Ranunculus repens</i>	creeping buttercup	U
<i>Ranunculus sardous</i>	hairy buttercup	U
<i>Rhamnus alnifolia</i>	alderleaf buckthorn	U
<i>Rhamnus lanceolata</i>	lanceleaf buckthorn	U
<i>Rhexia mariana</i>	Maryland meadowbeauty	U
<i>Rhexia mariana var. mariana</i>	Maryland meadowbeauty	U
<i>Rhododendron calendulaceum</i>	flame azalea	PIP
<i>Rhododendron catawbiense</i>	catawba rhododendron	PIP
<i>Rhododendron cumberlandense</i>	Cumberland rhododendron	PIP
<i>Rhododendron maximum</i>	great rhododendron	PIP
<i>Rhododendron minus</i>	Carolina rhododendron	PIP
<i>Rhododendron periclymenoides</i>	pink azalea	U
<i>Rhododendron prinophyllum</i>	early azalea	PIP

Scientific Name	Common Name	Park Status ¹
<i>Rhus aromatica var. aromatica</i>		PIP
<i>Rhus copallinum</i>	winged sumac	PIP
<i>Rhus copallinum var. latifolia</i>	winged sumac	U
<i>Rhus glabra</i>	smooth sumac	PIP
<i>Rhus hirta</i>		U
<i>Rhynchospora capitellata</i>	brownish beakrush	PIP
<i>Rhynchospora glomerata</i>	clustered beaksedge	U
<i>Ribes cynosbati</i>	eastern prickly gooseberry	U
<i>Robinia hispida</i>	bristly locust	PIP
<i>Robinia hispida var. kelseyi</i>	Kelsey's locust	U
<i>Robinia hispida var. rosea</i>	bristly locust	PIP
<i>Robinia pseudoacacia</i>	black locust	PIP
<i>Rorippa nasturtium-aquaticum</i>	watercress	PIP
<i>Rorippa palustris</i>	bog yellowcress	U
<i>Rorippa palustris ssp. fernaldiana</i>	Fernald's yellowcress	U
<i>Rorippa sylvestris</i>	creeping yellowcress	U
<i>Rosa carolina var. carolina</i>	Carolina rose	PIP
<i>Rosa multiflora</i>	multiflora rose	PIP
<i>Rosa palustris</i>	swamp rose	U
<i>Rosa setigera</i>	prairie rose	PIP
<i>Rosa virginiana</i>	Virginia rose	PIP
<i>Rosa wichuraiana</i>	memorial rose	PIP
<i>Rotala ramosior</i>	lowland rotala	U
<i>Rubus allegheniensis</i>	Allegheny blackberry	PIP
<i>Rubus allegheniensis var. allegheniensis</i>	Allegheny blackberry	PIP
<i>Rubus allegheniensis var. gravesii</i>	Graves' blackberry	U
<i>Rubus argutus</i>	sawtooth blackberry	PIP
<i>Rubus canadensis</i>	smooth blackberry	PIP

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Rubus cuneifolius</i>	sawtooth blackberry	PIP
<i>Rubus depavitus</i>	Aberdeen dewberry	U
<i>Rubus flagellaris</i>	sand blackberry	PIP
<i>Rubus hispidus</i>	sand blackberry	PIP
<i>Rubus laudatus</i>	plains blackberry	U
<i>Rubus occidentalis</i>	black raspberry	PIP
<i>Rubus odoratus</i>	purple flowering raspberry	PIP
<i>Rubus pensilvanicus</i>	Pennsylvania blackberry	PIP
<i>Rubus phoenicolasius</i>	wine raspberry	U
<i>Rubus roribaccus</i>	Lucretia dewberry	U
<i>Rubus whartoniae</i>	Wharton's dewberry	U
<i>Rudbeckia fulgida</i>	orange coneflower	PIP
<i>Rudbeckia fulgida var. fulgida</i>	orange coneflower	U
<i>Rudbeckia fulgida var. umbrosa</i>	orange coneflower	PIP
<i>Rudbeckia hirta</i>	black-eyed susan	PIP
<i>Rudbeckia hirta var. pulcherrima</i>	blackeyed Susan	U
<i>Rudbeckia laciniata</i>	cut-leaved coneflower	PIP
<i>Rudbeckia laciniata var. laciniata</i>	cutleaf coneflower	U
<i>Rudbeckia triloba</i>	brown-eyed Susan	PIP
<i>Rudbeckia triloba var. rupestris</i>	browneyed Susan	U
<i>Ruellia caroliniensis ssp. caroliniensis var. caroliniensis</i>	Carolina wild petunia	PIP
<i>Ruellia humilis</i>		U
<i>Ruellia purshiana</i>	pursh's wild-petunia	PIP
<i>Ruellia strepens</i>	limestone wild petunia	U
<i>Rumex acetosella</i>	sheep sorrel	PIP
<i>Rumex crispus</i>	curly dock	PIP
<i>Rumex obtusifolius</i>	bitter dock	PIP

Scientific Name	Common Name	Park Status ¹
<i>Sabatia angularis</i>	square-stemmed rose pink	PIP
<i>Saccharum alopecuroidum</i>	silver plume grass	PIP
<i>Sagittaria australis</i>	longbeak arrowhead	U
<i>Sagittaria brevirostra</i>	shortbeak arrowhead	U
<i>Sagittaria calycina</i>	hooded arrowhead	U
<i>Sagittaria calycina var. calycina</i>	hooded arrowhead	U
<i>Sagittaria latifolia</i>	broadleaf arrowhead	PIP
<i>Salix discolor</i>	pussy willow	U
<i>Salix humilis</i>	tall prairie willow	PIP
<i>Salix humilis var. humilis</i>	prairie willow	U
<i>Salix humilis var. tristis</i>	prairie willow	PIP
<i>Salix nigra</i>	black willow	PIP
<i>Salix sericea</i>	silky willow	U
<i>Salvia lyrata</i>	lyre-leaf sage	PIP
<i>Salvia urticifolia</i>	nettle-leaf sage	PIP
<i>Sambucus nigra</i>	European black elder	U
<i>Sambucus nigra ssp. canadensis</i>		PIP
<i>Sambucus racemosa var. racemosa</i>		U
<i>Samolus valerandi ssp. parviflorus</i>	seaside brookweed	PIP
<i>Sanguinaria canadensis</i>	bloodroot	PIP
<i>Sanicula canadensis</i>	Canadian black-snakeroot	PIP
<i>Sanicula marilandica</i>	Maryland sanicle	U
<i>Sanicula odorata</i>	clustered blacksnakeroot	PIP
<i>Sanicula smallii</i>	Small's black-snakeroot	PIP
<i>Sanicula trifoliata</i>	largefruit blacksnakeroot	U
<i>Saponaria officinalis</i>	bouncing-bet	PIP
<i>Sassafras albidum</i>	sassafras	PIP
<i>Saururus cernuus</i>	lizards tail	U
<i>Saxifraga michauxii</i>	michaux's saxifrage	PIP

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Saxifraga micranthidifolia</i>	lettuceleaf saxifrage	U
<i>Schizachyrium scoparium</i>	little bluestem	PIP
<i>Schizachyrium scoparium</i> var. <i>scoparium</i>	little bluestem	U
<i>Schoenoplectus pungens</i> var. <i>pungens</i>		U
<i>Schoenoplectus purshianus</i>		U
<i>Scirpus cyperinus</i>	cottongrass bulrush	PIP
<i>Scirpus georgianus</i>	Georgia bulrush	U
<i>Scirpus pendulus</i>	rufous bulrush	U
<i>Scirpus polyphyllus</i>	leafy bulrush	PIP
<i>Scleria oligantha</i>	littlehead nutrush	U
<i>Scleria pauciflora</i>	fewflower nutrush	U
<i>Scleria triglomerata</i>	whip nutrush	U
<i>Scrophularia marilandica</i>	carpenter's square	U
<i>Scutellaria elliptica</i>	hairy skullcap	PIP
<i>Scutellaria elliptica</i> var. <i>elliptica</i>	hairy skullcap	U
<i>Scutellaria elliptica</i> var. <i>hirsuta</i>	hairy skullcap	PIP
<i>Scutellaria incana</i>	hoary skullcap	PIP
<i>Scutellaria incana</i> var. <i>incana</i>	hoary skullcap	U
<i>Scutellaria incana</i> var. <i>punctata</i>	hoary skullcap	U
<i>Scutellaria lateriflora</i>	blue skullcap	U
<i>Scutellaria ovata</i>	heartleaf skullcap	PP
<i>Scutellaria ovata</i> ssp. <i>Ovata</i>	heartleaf skullcap	U
<i>Scutellaria parvula</i> var. <i>missouriensis</i>		U
<i>Scutellaria saxatilis</i>	smooth rock skullcap	U
<i>Scutellaria serrata</i>	showy skullcap	PIP
<i>Sedum pulchellum</i>	widowscross	PIP
<i>Sedum ternatum</i>	wood stonecrop	PIP

Scientific Name	Common Name	Park Status ¹
<i>Selaginella apoda</i>	meadow spikemoss	U
<i>Senna marilandica</i>	Maryland senna	PIP
<i>Sericocarpus asteroides</i>		U
<i>Sericocarpus linifolius</i>	narrowleaf whitetop aster	PIP
<i>Setaria faberi</i>	Japanese bristlegrass	U
<i>Setaria parviflora</i>	bristly foxtail	PIP
<i>Setaria viridis</i>	green bristle grass	PIP
<i>Setaria viridis</i> var. <i>viridis</i>	green bristlegrass	U
<i>Sherardia arvensis</i>	blue fieldmadder	PIP
<i>Sicyos angulatus</i>	one-seed bur-cucumber	PIP
<i>Sida hermaphrodita</i>	Virginia fanpetals	U
<i>Sida spinosa</i>	prickly fanpetals	PIP
<i>Silene antirrhina</i>	sleepy silene	U
<i>Silene latifolia</i>	bladder champion	U
<i>Silene latifolia</i> ssp. <i>alba</i>	bladder champion	U
<i>Silene noctiflora</i>	nightflowering silene	U
<i>Silene ovata</i>	ovate catchfly	PIP
<i>Silene rotundifolia</i>	roundleaf catchfly	PIP
<i>Silene stellata</i>	widowsfrill	PIP
<i>Silene virginica</i>	fire pink	PIP
<i>Silene vulgaris</i>	maidenstears	U
<i>Silphium asteriscus</i> var. <i>asteriscus</i>		PIP
<i>Silphium terebinthinaceum</i>	prairie rosinweed	PIP
<i>Silphium trifoliatum</i>	three-leaved rosinweed	PIP
<i>Silphium trifoliatum</i> var. <i>latifolium</i>	whorled rosinweed	PIP
<i>Silphium trifoliatum</i> var. <i>trifoliatum</i>	three-leaved rosinweed	PIP
<i>Sinapis arvensis</i>	corn-mustard	PIP
<i>Sisymbrium officinale</i>	hedgemustard	U
<i>Sisyrinchium albidum</i>	white blue-eyed grass	PIP

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Sisyrinchium angustifolium</i>	pointed blue-eyed-grass	PIP
<i>Sisyrinchium atlanticum</i>	eastern blueeyed grass	U
<i>Sisyrinchium mucronatum</i>	needletip blueeyed grass	U
<i>Smallanthus uvedalius</i>	yellow-flowered leafcup	PIP
<i>Smilax bona-nox</i>	saw greenbrier	PIP
<i>Smilax ecirrata</i>	upright carrionflower	PIP
<i>Smilax glauca</i>	glaucous-leaved greenbrier	PIP
<i>Smilax herbacea</i>	smooth carrion-flower	PIP
<i>Smilax hugeri</i>	huger's carrion-flower	PIP
<i>Smilax pulverulenta</i>	downy carrion-flower	PIP
<i>Smilax rotundifolia</i>	common greenbrier	PIP
<i>Smilax tamnoides</i>	bristly greenbrier	PIP
<i>Solanum carolinense</i> var. <i>carolinense</i>	Carolina horsenettle	PIP
<i>Solanum ptychanthum</i>	nightshade	PIP
<i>Solanum rostratum</i>	buffalobur nightshade	U
<i>Solidago arguta</i>	Atlantic goldenrod	PIP
<i>Solidago arguta</i> var. <i>arguta</i>	cut-leaved golden-rod	PIP
<i>Solidago arguta</i> var. <i>caroliniana</i>	Atlantic goldenrod	PIP
<i>Solidago bicolor</i>	white goldenrod	PIP
<i>Solidago caesia</i>	bluestem goldenrod	PIP
<i>Solidago caesia</i> var. <i>curtisii</i>		PIP
<i>Solidago canadensis</i>	Canada goldenrod	PIP
<i>Solidago canadensis</i> var. <i>canadensis</i>	Canada goldenrod	U
<i>Solidago canadensis</i> var. <i>scabra</i>	Canada goldenrod	PIP
<i>Solidago flaccidifolia</i>	Appalachian golden-rod	PIP
<i>Solidago flexicaulis</i>	broad-leaved goldenrod	PIP
<i>Solidago gigantea</i>	late goldenrod	PIP
<i>Solidago nemoralis</i> var. <i>nemoralis</i>	gray goldenrod	PIP

Scientific Name	Common Name	Park Status ¹
<i>Solidago odora</i> var. <i>odora</i>	anisescented goldenrod	PIP
<i>Solidago patula</i>	roundleaf goldenrod	PIP
<i>Solidago patula</i> var. <i>patula</i>	roundleaf goldenrod	U
<i>Solidago puberula</i>	downy goldenrod	U
<i>Solidago puberula</i> var. <i>puberula</i>	downy goldenrod	U
<i>Solidago roanensis</i>	roan mountain goldenrod	PIP
<i>Solidago rugosa</i>	wrinkleleaf goldenrod	PIP
<i>Solidago rugosa</i> ssp. <i>aspera</i>	wrinkleleaf goldenrod	U
<i>Solidago rugosa</i> ssp. <i>rugosa</i> var. <i>rugosa</i>	rough-leaf goldenrod	PIP
<i>Solidago speciosa</i>	showy goldenrod	U
<i>Solidago speciosa</i> var. <i>erecta</i>		PIP
<i>Solidago sphacelata</i>	autumn goldenrod	PIP
<i>Solidago ulmifolia</i> var. <i>ulmifolia</i>	elmleaf goldenrod	PIP
<i>Sonchus asper</i>	spiny-leaf sowthistle	PIP
<i>Sorghastrum nutans</i>	yellow Indian-grass	PIP
<i>Sorghum halepense</i>	johnsongrass	PIP
<i>Sparganium americanum</i>	American bur-reed	PIP
<i>Sparganium androcladum</i>	branched burreed	U
<i>Sphenopholis intermedia</i>	slender wedgescale	U
<i>Sphenopholis nitida</i>	shiny wedge grass	PIP
<i>Sphenopholis obtusata</i>	prairie wedgescale	PIP
<i>Spigelia marilandica</i>	woodland pinkroot	U
<i>Spiraea prunifolia</i>	bridal-wreath	PIP
<i>Spiraea tomentosa</i>	steeplebush	U
<i>Spiranthes cernua</i>	nodding ladies'-tresses	PIP
<i>Spiranthes lacera</i>	northern slender ladiestresses	U
<i>Spiranthes lacera</i> var. <i>gracilis</i>	southern slender ladies'tresses	PIP
<i>Spiranthes lacera</i> var. <i>lacera</i>	northern slender ladiestresses	U

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Spiranthes lucida</i>	shining ladiestresses	U
<i>Spiranthes ochroleuca</i>	yellow nodding ladiestresses	U
<i>Spiranthes ovalis</i>	lesser ladies'-tresses	PIP
<i>Spiranthes praecox</i>		PIP
<i>Spiranthes tuberosa</i>	little ladiestresses	U
<i>Spiranthes vernalis</i>	twisted ladies'-tresses	PIP
<i>Sporobolus clandestinus</i>	rough dropseed	U
<i>Sporobolus compositus</i> var. <i>compositus</i>	dropseed	U
<i>Sporobolus indicus</i> var. <i>indicus</i>		U
<i>Sporobolus neglectus</i>	puffsheath dropseed	U
<i>Sporobolus vaginiflorus</i>	poverty dropseed	U
<i>Sporobolus vaginiflorus</i> var. <i>ozarkanus</i>		U
<i>Sporobolus vaginiflorus</i> var. <i>vaginiflorus</i>		U
<i>Stachys eplingii</i>	Epling's hedgenettle	U
<i>Stachys hyssopifolia</i>	hyssopleaf hedgenettle	U
<i>Stachys nuttallii</i>	nuttall's hedge-nettle	PIP
<i>Stachys tenuifolia</i>	smooth hedgenettle	U
<i>Staphylea trifolia</i>	American bladdernut	U
<i>Stellaria corei</i>	Tennessee starwort	U
<i>Stellaria graminea</i>	grasslike starwort	U
<i>Stellaria media</i>	common starwort	PIP
<i>Stellaria media</i> ssp. <i>media</i>	common chickweed	U
<i>Stellaria pubera</i>	giant chickweed	PIP
<i>Stewartia ovata</i>	mountain camellia	U
<i>Streptopus lanceolatus</i>		U
<i>Streptopus lanceolatus</i> var. <i>lanceolatus</i>		U
<i>Streptopus lanceolatus</i> var. <i>roseus</i>	twistedstalk	PIP
<i>Strophostyles umbellata</i>	pink fuzzybean	U

Scientific Name	Common Name	Park Status ¹
<i>Stylophorum diphyllum</i>	celandine poppy	U
<i>Stylosanthes biflora</i>	sidebeak pencilflower	U
<i>Symphoricarpos orbiculatus</i>	coral-berry	PIP
<i>Symphyotrichum cordifolium</i>	common blue wood aster	PIP
<i>Symphyotrichum divaricatum</i>		U
<i>Symphyotrichum drummondii</i>		U
<i>Symphyotrichum drummondii</i> var. <i>drummondii</i>		U
<i>Symphyotrichum dumosum</i>		U
<i>Symphyotrichum dumosum</i> var. <i>dumosum</i>		PIP
<i>Symphyotrichum laeve</i>	smooth blue aster	PIP
<i>Symphyotrichum laeve</i> var. <i>concinnum</i>		PIP
<i>Symphyotrichum lanceolatum</i> ssp. <i>lanceolatum</i> var. <i>lanceolatum</i>	white panicle aster	PIP
<i>Symphyotrichum lateriflorum</i>	calico aster	PIP
<i>Symphyotrichum lateriflorum</i> var. <i>lateriflorum</i>		PIP
<i>Symphyotrichum lowrieianum</i>		PIP
<i>Symphyotrichum novae-angliae</i>		U
<i>Symphyotrichum oblongifolium</i>	aromatic aster	PIP
<i>Symphyotrichum patens</i>	late purple aster	PIP
<i>Symphyotrichum patens</i> var. <i>patens</i>		PIP
<i>Symphyotrichum phlogifolium</i>	phlox-leaf aster	PIP
<i>Symphyotrichum pilosum</i>		U
<i>Symphyotrichum pilosum</i> var. <i>pilosum</i>		PIP
<i>Symphyotrichum prenanthoides</i>	crookedstem aster	PIP
<i>Symphyotrichum puniceum</i> var. <i>puniceum</i>		U
<i>Symphyotrichum undulatum</i>	waxyleaf aster	PIP

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

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Scientific Name	Common Name	Park Status ¹
<i>Synandra hispidula</i>	Guyandotte beauty	U
<i>Taenidia integerrima</i>	yellow pimpernell	PIP
<i>Taraxacum officinale</i> ssp. <i>officinale</i>	wandering dandelion	PIP
<i>Taxus canadensis</i>	Canada yew	U
<i>Tephrosia virginiana</i>	goat's-rue	PIP
<i>Teucrium canadense</i>	Candad germander	PIP
<i>Teucrium canadense</i> var. <i>canadense</i>	Canada germander	PIP
<i>Thalictrum clavatum</i>	mountain meadow-rue	PIP
<i>Thalictrum coriaceum</i>	maid of the mist	U
<i>Thalictrum dioicum</i>	early meadowrue	PIP
<i>Thalictrum pubescens</i>	tall meadow-rue	PIP
<i>Thalictrum revolutum</i>	waxleaf meadowrue	PIP
<i>Thalictrum thalictroides</i>	windflower	PIP
<i>Thaspium barbinode</i>	hairy-jointed meadow-parsnip	PIP
<i>Thaspium trifoliatum</i>	purple meadow-parsnip	PIP
<i>Thaspium trifoliatum</i> var. <i>aureum</i>	purple meadowparsnip	U
<i>Thaspium trifoliatum</i> var. <i>trifoliatum</i>	purple meadowparsnip	U
<i>Thelypteris dentata</i>	mountain woodfern	U
<i>Thelypteris noveboracensis</i>	new york fern	PIP
<i>Thelypteris palustris</i> var. <i>pubescens</i>	eastern marsh fern	U
<i>Thlaspi arvense</i>	field pennycress	U
<i>Thuja occidentalis</i>	eastern arborvitae	U
<i>Tiarella cordifolia</i>	heart-leaved foam-flower	PIP
<i>Tiarella cordifolia</i> var. <i>cordifolia</i>	heartleaf foamflower	U
<i>Tilia americana</i>	American basswood	PIP
<i>Tilia americana</i> var. <i>americana</i>	American basswood	PIP

Scientific Name	Common Name	Park Status ¹
<i>Tilia americana</i> var. <i>heterophylla</i>	white basswood	PIP
<i>Tipularia discolor</i>	crippled crane-fly	PIP
<i>Torilis arvensis</i>	field hedge-parsley	PIP
<i>Toxicodendron radicans</i>	poison ivy	PIP
<i>Toxicodendron radicans</i> ssp. <i>radicans</i>	eastern poison ivy	U
<i>Tradescantia ohioensis</i>	ohio spiderwort	PIP
<i>Tradescantia subaspera</i>	zigzag spiderwort	PIP
<i>Tradescantia subaspera</i> var. <i>subaspera</i>	zigzag spiderwort	U
<i>Tradescantia virginiana</i>	Virginia spiderwort	PIP
<i>Tragopogon dubius</i>	yellow salsify	U
<i>Trautvetteria caroliniensis</i> var. <i>caroliniensis</i>	Carolina bugbane	PIP
<i>Trichostema dichotomum</i>	forked bluecurls	PIP
<i>Tridens flavus</i>	tall purple-top fluffgrass	PIP
<i>Trifolium calcaricum</i>	clover	U
<i>Trifolium campestre</i>	low hop clover	PIP
<i>Trifolium dubium</i>	suckling clover	U
<i>Trifolium hybridum</i>	alsike clover	PIP
<i>Trifolium pratense</i>	red clover	PIP
<i>Trifolium repens</i>	white clover	PIP
<i>Trillium erectum</i>	stinking benjamin	PIP
<i>Trillium grandiflorum</i>	large-flowered wakerobin	PIP
<i>Trillium luteum</i>	yellow wakerobin	U
<i>Trillium sulcatum</i>	furrowed wakerobin	PIP
<i>Trillium undulatum</i>	painted trillium	PIP
<i>Triodanis perfoliata</i>	clasping Venus' lookingglass	U
<i>Triodanis perfoliata</i> var. <i>perfoliata</i>	clasping venus' looking-glass	PIP
<i>Triosteum angustifolium</i>	yellowfruit horsegentian	U
<i>Triosteum aurantiacum</i>	horse-gentian	PIP

Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Triosteum aurantiacum</i> var. <i>aurantiacum</i>	orange-fruit horse-gentian	PIP
<i>Triosteum aurantiacum</i> var. <i>glaucescens</i>	orange-fruit horse-gentian	U
<i>Triosteum perfoliatum</i>	feverwort	PIP
<i>Triphora trianthophora</i>	three-birds	U
<i>Tripsacum dactyloides</i>	eastern gamagrass	PIP
<i>Tsuga canadensis</i>	eastern hemlock	PIP
<i>Tussilago farfara</i>	coltsfoot	PIP
<i>Typha latifolia</i>	broad-leaf cattail	PIP
<i>Ulmus alata</i>	winged elm	PIP
<i>Ulmus americana</i>	American elm	PIP
<i>Ulmus rubra</i>	slippery elm	PIP
<i>Ulmus serotina</i>	September elm	U
<i>Uvularia grandiflora</i>	large-flowered bellwort	PIP
<i>Uvularia perfoliata</i>	perfoliate bellwort	PIP
<i>Uvularia sessilifolia</i>	sessile-leaf bellwort	PIP
<i>Vaccinium arboreum</i>	tree sparkleberry	U
<i>Vaccinium corymbosum</i>	highbush blueberry	PIP
<i>Vaccinium erythrocarpum</i>	southern mountain cranberry	PIP
<i>Vaccinium pallidum</i>	early lowbush blueberry	PIP
<i>Vaccinium simulatum</i>	upland highbush blueberry	PIP
<i>Vaccinium stamineum</i>	squaw huckleberry	PIP
<i>Valerianella locusta</i>	lewiston cornsalad	PIP
<i>Valerianella radiata</i>	beaked cornsalad	U
<i>Veratrum viride</i>	American false hellebore	U
<i>Verbascum blattaria</i>	moth mullein	PIP
<i>Verbascum thapsus</i>	great mullein	PIP
<i>Verbena simplex</i>	narrowleaf vervain	U
<i>Verbena urticifolia</i>	white vervain	PIP
<i>Verbena urticifolia</i> var. <i>urticifolia</i>	white vervain	U

Scientific Name	Common Name	Park Status ¹
<i>Verbesina alternifolia</i>	wingstem	PIP
<i>Verbesina occidentalis</i>	yellow crownbeard	PIP
<i>Verbesina virginica</i> var. <i>virginica</i>	white crownbeard	PIP
<i>Vernonia gigantea</i> ssp. <i>gigantea</i>	ironweed	PIP
<i>Veronica agrestis</i>	green field speedwell	U
<i>Veronica anagallis-aquatica</i>	brook pimpernell	U
<i>Veronica arvensis</i>	corn speedwell	PIP
<i>Veronica hederifolia</i>	ivy-leaf speedwell	U
<i>Veronica officinalis</i> var. <i>officinalis</i>	common gypsyweed	PIP
<i>Veronica peregrina</i>	neckweed	U
<i>Veronica peregrina</i> ssp. <i>peregrina</i>	neckweed	U
<i>Veronica serpyllifolia</i> ssp. <i>serpyllifolia</i>		PIP
<i>Veronicastrum virginicum</i>	Culver's root	U
<i>Viburnum acerifolium</i>	maple-leaf arrowwood	PIP
<i>Viburnum dentatum</i>	southern arrowwood	U
<i>Viburnum nudum</i>	possumhaw viburnum	U
<i>Viburnum nudum</i> var. <i>cassinoides</i>	possumhaw	PIP
<i>Viburnum opulus</i>	European cranberrybush	PIP
<i>Viburnum prunifolium</i>	smooth black-haw	PIP
<i>Viburnum rafinesquianum</i>	downy arrowwood	U
<i>Viburnum rufidulum</i>	rusty blackhaw	PIP
<i>Vicia caroliniana</i>	Carolina wood vetch	PIP
<i>Vicia sativa</i>	common vetch	U
<i>Vicia sativa</i> ssp. <i>nigra</i>	garden vetch	PIP
<i>Vicia villosa</i>	winter vetch	U
<i>Vinca minor</i>	common periwinkle	PIP
<i>Viola affinis</i>	sand violet	PIP
<i>Viola arvensis</i>	field pansy	U

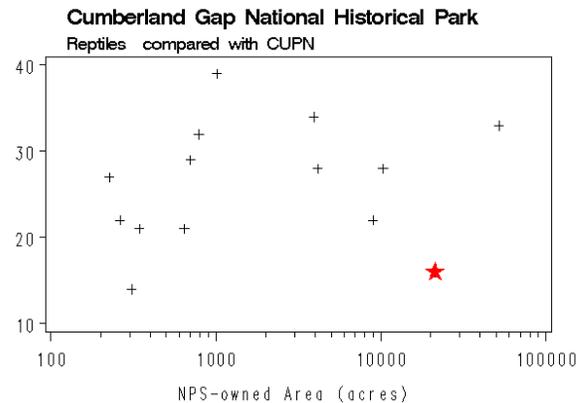
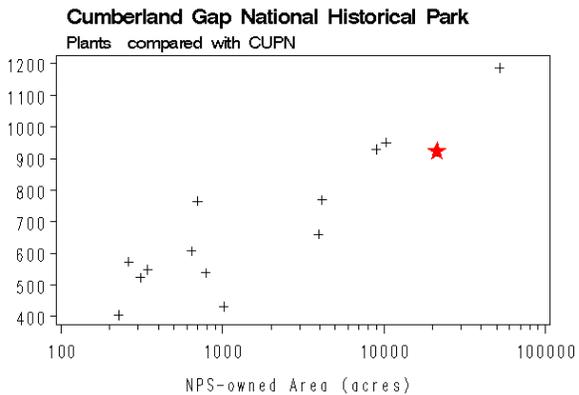
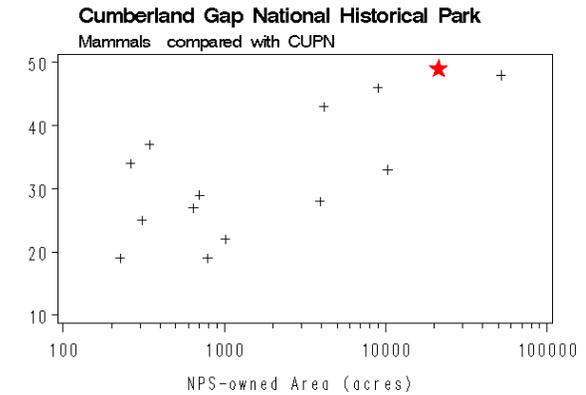
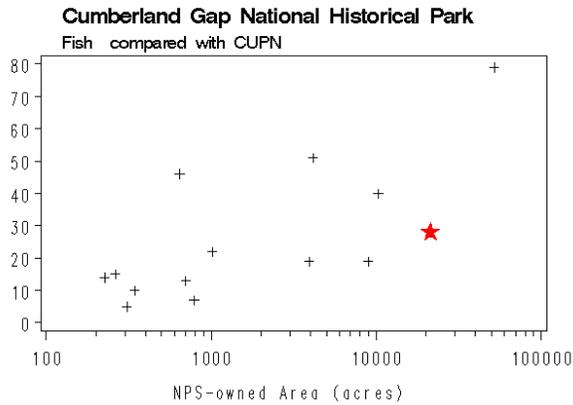
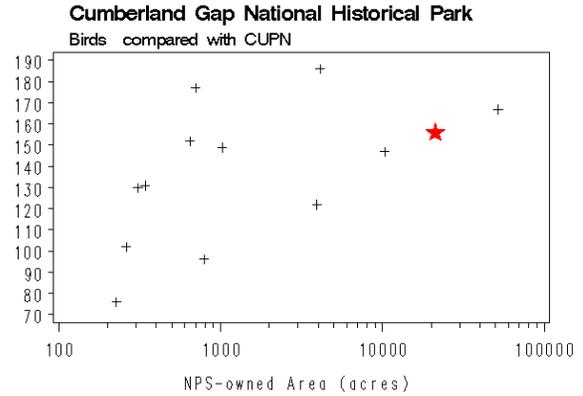
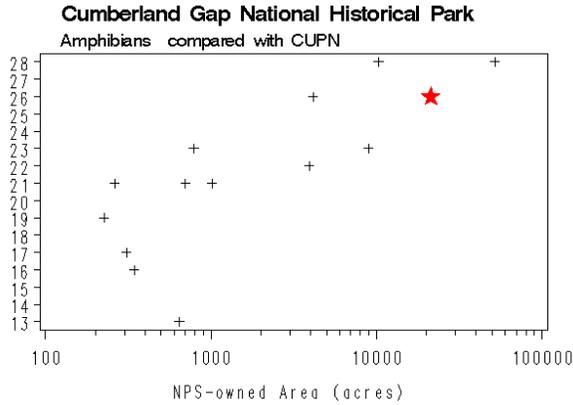
Cumberland Gap National Historical Park (CUGA) Local List (NPSpecies 8/19/2009) (continued).

Scientific Name	Common Name	Park Status ¹
<i>Viola bicolor</i>	field pansy	PIP
<i>Viola blanda</i>	smooth white violet	PIP
<i>Viola canadensis</i> var. <i>canadensis</i>	Canadian white violet	PIP
<i>Viola conspersa</i>	American bog violet	PIP
<i>Viola cucullata</i>	marsh blue violet	PIP
<i>Viola hastata</i>	halberd-leaved yellow violet	PIP
<i>Viola hirsutula</i>	southern wood violet	PIP
<i>Viola labradorica</i>	alpine violet	U
<i>Viola macloskeyi</i> ssp. <i>pallens</i>	smooth white violet	PIP
<i>Viola palmata</i> var. <i>palmata</i>		PIP
<i>Viola pedata</i>	bird's-foot violet	PIP
<i>Viola pubescens</i>	downy yellow violet	PIP
<i>Viola pubescens</i> var. <i>pubescens</i>	smooth yellow violet	PIP
<i>Viola rostrata</i>	longspur violet	U
<i>Viola rotundifolia</i>	roundleaf violet	PIP
<i>Viola sagittata</i>	arrow-leaved violet	PIP
<i>Viola sororia</i>	common blue violet	PIP
<i>Viola striata</i>	striped violet	PIP
<i>Viola tripartita</i>	threepart violet	U
<i>Vitis aestivalis</i>	summer grape	PIP
<i>Vitis aestivalis</i> var. <i>aestivalis</i>	summer grape	U
<i>Vitis aestivalis</i> var. <i>bicolor</i>	summer grape	PIP
<i>Vitis cinerea</i>	pigeon grape	PIP
<i>Vitis cinerea</i> var. <i>baileyana</i>	graybark grape	PIP
<i>Vitis cinerea</i> var. <i>floridana</i>	Florida grape	PIP
<i>Vitis labrusca</i>	fox grape	PIP
<i>Vitis rotundifolia</i>	muscadine grape	PIP
<i>Vitis vulpina</i>	winter grape	PIP
<i>Waldsteinia fragarioides</i>	barren strawberry	PIP

Scientific Name	Common Name	Park Status ¹
<i>Waldsteinia fragarioides</i> ssp. <i>doniana</i>	Appalachian barren strawberry	U
<i>Wisteria frutescens</i>	American wisteria	U
<i>Woodsia appalachiana</i>	Appalachian cliff fern	PIP
<i>Woodsia obtusa</i>	blunt-lobe woodsia	PIP
<i>Woodwardia areolata</i>	netted chainfern	PIP
<i>Xanthium strumarium</i>	rough cocklebur	PIP
<i>Xanthium strumarium</i> var. <i>glabratum</i>	rough cockleburr	U
<i>Yucca filamentosa</i>	common yucca	PIP
<i>Zizia aptera</i>	golden alexander	PIP

¹Park Status refers to the current status of the organism in the park, where PIP=Present in Park, PP=Probably Present, E=Encroaching, F=False Report, H=Historic, U=Unconfirmed.

Appendix C. Cumberland Gap National Historical Park species-area comparisons with other Cumberland Piedmont Network parks.



Organism counts are grouped at the species level and include both present in park and probably present. Analyses courtesy of Dr. Tom Philippi, NPS Inventory and Monitoring Program (Source: NPSpecies 28 September 2008).

The Department of the Interior protects and manages the nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its special responsibilities to American Indians, Alaska Natives, and affiliated Island Communities.

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