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The Vascular Flora of Garrard County, Kentucky

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The Vascular Flora
of Garrard County, Kentucky

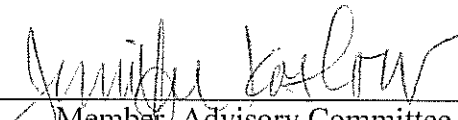
By

William W. Overbeck

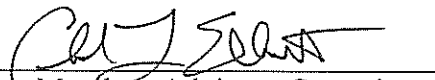
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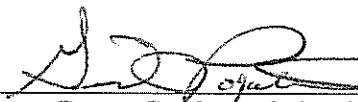
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Date 4/7/2014

The Vascular Flora of Garrard County, Kentucky

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Submitted to the Faculty of the Graduate School of
Eastern Kentucky University
in partial fulfillment of the requirements
for the degree of
MASTER OF SCIENCE
May, 2014

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DEDICATION

This thesis is dedicated to my loving parents.

ACKNOWLEDGMENTS

While I was attending The School of the Art Institute of Chicago and studying scientific illustration at The Field Museum of Natural History, Peggy Macnamara encouraged me to consider biology as a career; thanks to her I pursued the integration of fine art, botany, and ecological restoration. I would like to thank my first mentor in botany, Roger Hotham, who patiently showed me the plant communities of Bluff Spring Fen in Elgin, IL. I would like to thank June Keibler and Mary Zaander of Witness Tree Native Landscapes, Inc., for training me in ecological restoration during work in the Chicago Wilderness. I must acknowledge Lorna Gladstone, owner of Gladstone Fen, who allowed me the opportunity to experiment in ecological restoration and adaptive land management. Thanks to Bill Kleiman of The Nature Conservancy's Nachusa Grasslands, who inspired me to pursue a Master of Science in Kentucky. Thanks also to Susanne Masi of The Chicago Botanic Gardens, Dr. Julian Campbell of The Bluegrass Woodland Restoration Center, Dr. Ralph L. Thompson of Berea College, Dr. Raymond Cranfill, Gary Libby, Melanie G. Bentley, Robert Pace and Mason Brock for their support and assistance. Thanks to Claire Sipple and Lower Howard's Creek State Nature Preserve, Brent Harrell of the U.S. Fish and Wildlife Service, and Ken Cooke and the Friends of Wolf Run Watershed, all of whom provided work contracts which allowed for employment. I would like to thank my major professor and advisor, Dr. Ronald L. Jones, for his guidance and patience. I would like to thank my other graduate committee members, Dr. Jennifer Koslow and Dr. Charles L. Elliott, for their comments and assistance.

ABSTRACT

Garrard County, Kentucky, was the subject of a floristic study conducted from 2010 to 2013. The study documented 961 species in 494 genera and 137 families. Garrard County encompasses 60,570 hectares in central Kentucky and includes parts of both the Bluegrass Section and the Knobs-Norman Upland of the Interior Low Plateaus. Permitted collecting at The Felix Reynolds Prairie, The Nature Conservancy's Sally Brown and Crutcher Preserve, Tom Dorman State Nature Preserve, and Maywoods Environmental and Educational Laboratory was coordinated with state and private conservation agencies. Two plant communities known to occur in the county, Limestone/Dolomite Prairie and Bluegrass Mesophytic Cane Forest, are listed as Endangered in Kentucky. Other plant communities are described and compared with previous vegetation studies of the Bluegrass and Knobs. Sixteen state-listed species were documented in the county, including a Historical species, four Endangered, five Threatened, and six Special Concern. About 18% of the flora is non-native, and 95 of these species are listed as Severe, Significant, or Moderate Threats, or Watch List. Habitat loss and invasive species continue to degrade rare plant community remnants and populations of rare plants. Applications of baseline floristic inventories can be used in assessing conservation priorities for landscape preservation in Kentucky.

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CHAPTER I

INTRODUCTION

County floras provide significant data for understanding the occurrence and distribution of plants in a state. The voucher specimens from county level studies, along with other kinds of floristic studies, provide the baseline knowledge from which more comprehensive treatments of a state's flora can be accomplished. In Kentucky, comprehensive works include those by Jones (2005), which lists 2,600 native and naturalized species, and by Campbell and Medley (2012), which lists 2,991 species for the state. These works provide good overall treatments of the vascular plants found within the Commonwealth of Kentucky, but the authors acknowledge that they are all incomplete to some degree. Kentucky is far behind most states in building a substantial specimen collection and database. Funk and Morin (2000) ranked Kentucky tenth out of 13 southeastern states in the number of in-state herbarium specimens per square mile. One of the reasons for a lack of specimens is a lack of county floras; in Kentucky only about 20% of the 120 counties have received an intensive floristic survey (Jones 2005).

There is a great need for information on the status of rare plants and natural plant communities, as well as the occurrence of non-native species in the state (Jones 2005). The need to protect populations of federal and state-listed species and their associated communities is increasingly important in this era of continuing habitat destruction and climate change. Non-native naturalized species, especially those that invade natural habitats, pose a great threat to native flora and plant communities. Recent data on the

distribution and spread of exotic plants into Kentucky provide invaluable information for those working to preserve the region's botanical resources (Jones 2005).

The objectives of this research were to: 1) conduct an inventory of the vascular plants within Garrard County; 2) describe the plant communities; 3) update the flora of natural areas within the county; 4) establish the presence of rare, threatened, and endangered species; and, 5) determine the status and current threats from non-native species.

CHAPTER II

STUDY AREA

Garrard County was chosen as the subject of this descriptive study to assist in compiling a comprehensive flora for central Kentucky. A survey of the vascular plants of Garrard County has never been completed, although preliminary data are available from three studies within the county (Godbey 1984; Thompson and Poindexter 2005; Thompson and Green 2010). A search of the Eastern Kentucky University Herbarium (EKY) database (Pace et al. 2013) and the Atlas of Vascular Plants in Kentucky database (Campbell and Medley 2005, 2012) produced a total of about 500 species for Garrard County, but an area of this size should have at least 800–900 vascular plant species (Jones 2005). The geographic position of the county, encompassing the boundaries of major physiographic provinces as well as several sectional and subsectional provinces, suggests that the county could potentially have a rich flora. Significant natural areas of interest that occur within the county are: Tom Dorman State Nature Preserve and The Nature Conservancy's Sally Brown and Crutcher Preserve in the Kentucky River Palisades, The Felix Reynolds Prairie in the Outer Bluegrass, and Eastern Kentucky University's Maywoods Environmental and Educational Laboratory in the Knobs Region.

Location

Garrard County is located within the Ohio River Valley in central Kentucky, between 37°50'0.00" and 37°28'0.00" N latitude, and 84°45'0.00" and 84°21'0.00" W longitude (Figure 1). Garrard County includes all or parts of eleven 7.5-minute topographic quadrangle maps: Wilmore, Little Hickman, Bryantsville, Buckeye,



Figure 1: Location of Garrard County within the state of Kentucky. Source: BGCAP 2012. Bluegrass Community Action Partnership. Web site: <http://www.bluegrasscommunityaction.org/Pages/garrard.html>.

Kirksville, Stanford, Lancaster, Paint Lick, Berea, Broadhead, and Wildie. Garrard County is approximately 42.5 kilometers (26.4 miles) in length and 17.5 kilometers (10.9 miles) in width, and encompasses 60,592 hectares (149,726 acres or 234 square miles) (McGrain and Currens 1978). Herrington Lake, an impoundment of the Dix River with a surface area of 945 hectares (2,335 acres), forms a portion of the northwest boundary of the county. Other boundaries of Garrard County are delineated by the Kentucky River to the north, Paint Lick Creek to the east, and the Dix River (including the Herrington Lake impoundment) to the west. Boundaries are also represented by the adjacent counties of Jessamine (north), Madison (northeast), Rockcastle (southeast), Lincoln (southwest), Boyle (west), and Mercer (northwest) (Figure 2).

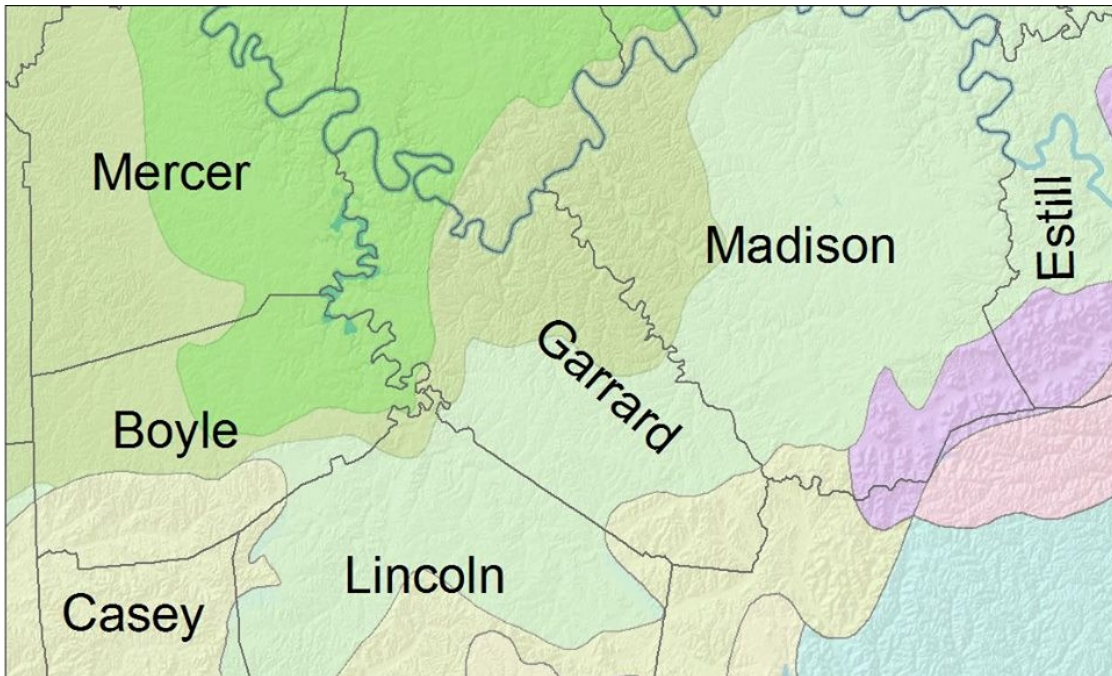


Figure 2. Location of Garrard County in relation to surrounding counties in central Kentucky. Source: Woods, A.J., J.M. Omernik, W.H. Martin, G.J. Pond, W.M. Andrews, S.M. Call, J.A. Comstock, and D.D. Taylor. 2002. Ecoregions of Kentucky (color poster with map, descriptive text, summary tables, and photographs). United States Geological Survey. Reston, VA.

Natural Regions

Natural regions can be defined by physiographic province from differences in landform and underlying geology, or by ecoregion (Jones 2005). Garrard County is within the Interior Low Plateaus Physiographic Province, and includes portions of the Outer Bluegrass, Eden Shale Belt, and Inner Bluegrass Subsections of the Bluegrass Physiographic Section (Figures 3, 4; Fenneman 1938; McGrain 1983). The southern quarter of Garrard County lies within the Knobs region. The Knobs region has been treated variously in terms of physiography as part of the Bluegrass, as part of the Mississippian Plateau, and as a separate physiographic unit (Smalley 1983). From an ecoregion standpoint (Figure 5), Garrard County includes parts of the Inner Bluegrass,

Hills of the Bluegrass (Eden Shale Belt), Outer Bluegrass and Knobs-Norman Upland (Woods et al. 2002).

The Bluegrass Section of the Interior Low Plateaus, as mapped by Woods et al. (2002), extends from Maysville to Louisville along the Ohio River and as far south as the towns of Berea (Madison County), Stanford (Lincoln County), and Lebanon (Marion County). In physiographic terms, the Bluegrass is flanked by the Appalachian Plateaus (or Eastern Coalfields) to the east, and the Highland Rim (also called Mississippian Plateau or Pennyrile Plateau) to the west and south (Figures 3, 4). The Knobs-Norman Upland subsection forms a ring of conical knobstone escarpments and narrow linear limestone ridges in a horseshoe pattern around the Bluegrass (Woods et al. 2002).

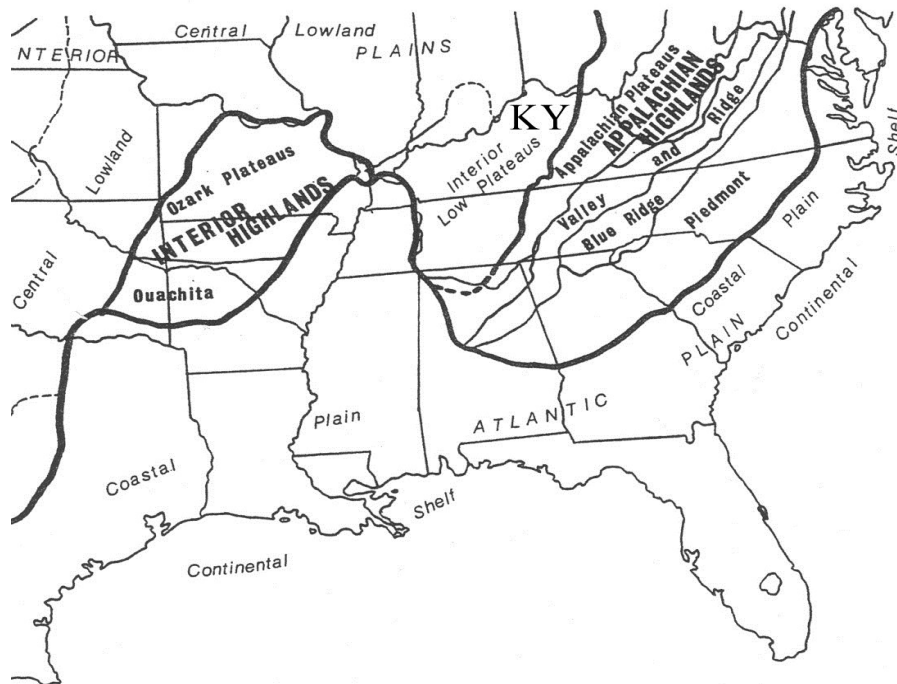


Figure 3. Southeastern United States: state boundaries and physiographic provinces. Source: USDA, FS 1969. A forest atlas of the South. U.S. Dept. Agric., Forest Service. Southern Research Station, Asheville, NC.

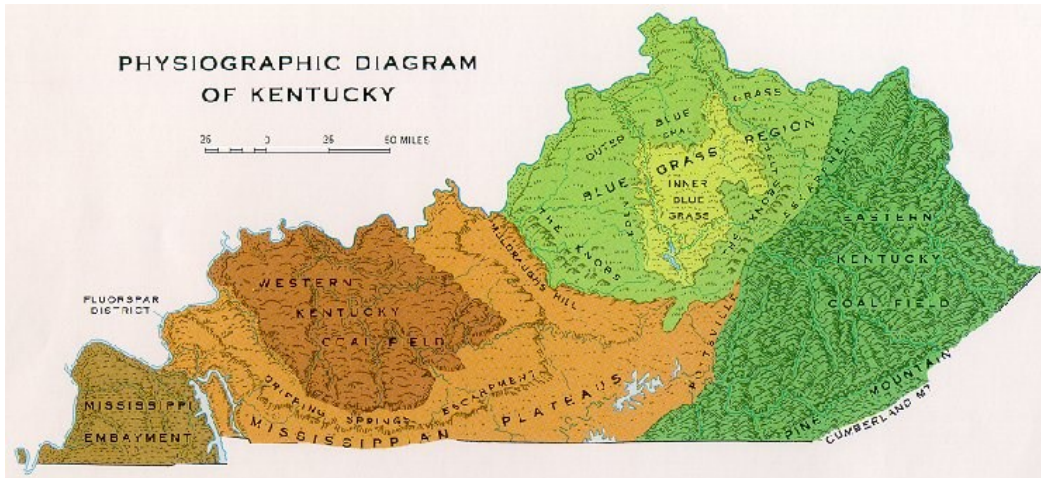


Figure 4. Physiographic diagram of Kentucky. Source: (Kentucky Geologic Survey 2012a. Web site: <https://www.uky.edu/KGS/geoky/physiographic.htm>).

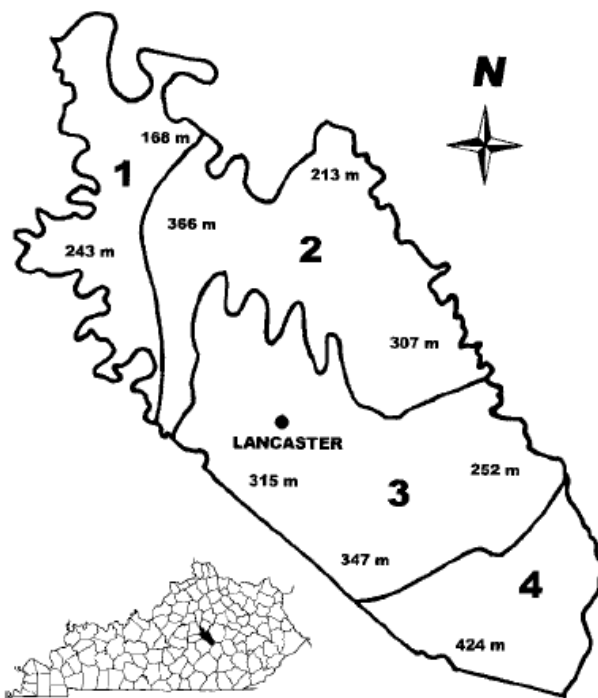


Figure 5. Ecoregions in Garrard County, Kentucky. (1) Inner Bluegrass, (2) Hills of the Bluegrass, (3) Outer Bluegrass, (4) Knobs-Norman Upland. Source: (Thompson, R.L. and D.B. Poindexter 2005. Host specificity of American mistletoe (*Phoradendron leucarpum*, Viscaceae) in Garrard County, Kentucky. *Journal of the Kentucky Academy of Science* 66:40-43.

Topography

The following information is from McGrain and Currens (1978). Topography of Garrard County is typically represented by dissected plateaus forming ridges, valleys, slopes, and rock outcrops (Figure 6). Level to rolling uplands are found in the northwest between U.S. 27 and Herrington Lake. The Bluegrass and Knobs-Norman Upland are characterized by broad floodplains along larger streams and narrow valleys in headwater tributaries. The topography has been shaped by uplifts and faulting combined with erosion (see Geology below). Sinkholes, knobs, coves, narrow to broad ridges, and

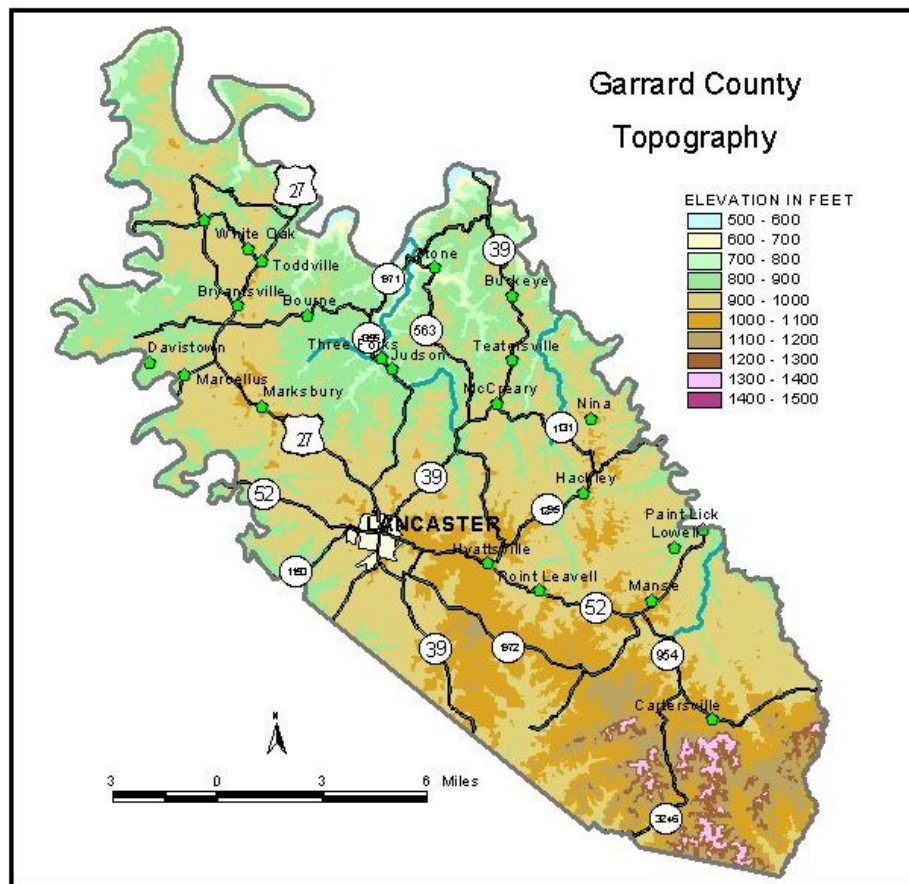


Figure 6. Topography of Garrard County, Kentucky.
Source: Kentucky Geologic Survey 2014. Web site:
<http://kgs.uky.edu/kgsweb/download/gwatlas/gwcounty/garrard/garrardel.jpg>.

valley bottoms facilitate various moisture conditions and ultimately influence plant habitat. Within each of these categories there are micro-topographic variations such as convex or concave terrain and various slope aspects. Elevation is generally gained across the Bluegrass-Knobs transition area in a southeast transect of Garrard County with the highest elevations found in the Knobs-Norman Upland. Elevations range from 426.7 meters (1400 feet) above sea level on the dividing ridge between Paint Lick Creek and the Dix River to an elevation of 156.7 meters (514 feet) at normal pool of the Kentucky River leaving Garrard County. A limestone promontory, Burnett Knob, is a high point at 335.3 meters (1100 feet) within the Bluegrass section of the county just east of U.S. 27, south of the Kentucky River. Many prominent knobs occupy the Knobs-Norman Upland of Garrard County.

Geology

The following information on the geology of Garrard County is from McGrain and Currens (1978) and McGrain (1983). Sedimentary rocks of Paleozoic Age occur including Middle Ordovician, Upper Ordovician, Silurian, Devonian, and Mississippian strata along with various alluvial deposits of Quaternary Age. From earliest Ordovician to most recent Mississippian, the geologic strata of the High Bridge Group, Clays Ferry Formation, the Ashlock and Drakes Formations, the Brassfield Dolomite and Crab Orchard Formations, the Boyle Dolomite and New Albany Shale, and the Borden Formations are major physiographic features that influence surface conditions. Alluvial deposits originating from watercourse sedimentation are found on some broad ridges and terraces of Quaternary Age. Capstones of Devonian black shale and overlaying

Mississippian limestone create knobstone escarpments of varying sizes. Fault zones run east-west along the Kentucky River and along the watershed divide of the Kentucky and Dix Rivers. The Kentucky River Fault Zone occurs in Middle Ordovician limestone, while the Irvine-Paint Creek Fault Zone occurs in Upper Ordovician limestone. These fissures in the Ordovician limestone were a major factor in the formation of the Kentucky River Palisades and the erosion of the Garrard County region. The Irvine-Paint Creek Fault Zone lies in southern Garrard County. This faulting in the Brassfield Dolomite and Silurian limestones has resulted in a band of limestone outcrops in the Outer Bluegrass, referred to in this study as the Dolomitic Foothills.

The following quote is taken from the website of the Kentucky Geologic Survey (2012b), describing the geologic origin of the Knobs:

“The Knobs is the physiographic region that borders the Outer Bluegrass. It consists of hundreds of isolated, steep sloping, often cone-shaped hills. In physiographic terms, the hills are *monadnocks* or *erosional remnants*. They were originally continuous with the Mississippian Plateau, but were separated from the plateau by stream erosion. Many of the knobs are still capped by erosionally-resistant limestones or sandstones. The sharp slopes of the Knobs are mostly composed of shales of the Mississippian-age Borden Formation, which are less resistant to erosion than the overlying limestones and sandstones. The base of the Knobs commonly contain Devonian black shales. The Knobs physiographic region occurs along the outcrop belt of the Devonian-Mississippian contact. The knobs are usually

associated with the outcrop belt of Silurian and Devonian rocks which commonly crop out nearby.”

The following is a quote from the website of the Kentucky Geologic Survey (2012c), concerning the Bluegrass region:

“...the Bluegrass physiographic region is restricted to the central part of the State where Ordovician (and some Silurian, and Devonian) age rocks are exposed at the surface. The Inner Blue Grass is characterized by gently rolling hills and rich, fertile soils. The gently rolling hills are caused by the weathering of relatively thick-bedded limestone that characterize the Ordovician strata of central Kentucky that has been pushed up along the crest of the Cincinnati Arch. Weathering of the limestones produces sink holes, sinking streams, springs, caves and soils. The soils are fertile because the Ordovician limestones contain phosphate minerals (e.g., apatite), which are natural fertilizers. The Kentucky River Palisades are cliffs in the gorge or canyon along the Kentucky River where it cuts through resistant massive limestones and dolostones (High Bridge Group). These massive limestones and dolostones are the oldest strata exposed at the surface in Kentucky.”

Soils

Soils vary greatly across Garrard County from alkaline soils with high fertility in the Bluegrass to acidic and infertile soils in the Knobs-Norman Upland (Evans and Kelley 1996). The Bluegrass Region of the Interior Low Plateaus frequently develops

Alfisols, a general term for the soils formed under hardwood forests from mineral residuum of calcareous bedrock, which appear as dark brown silt loams with a clayey subsoil (Wharton and Barbour 1991).

Inner Bluegrass landscapes in Garrard County contain Fairmount-Faywood- Rock outcrop soil associations which form 19% of the county and are typical of steep limestone valleys near the Kentucky River Palisades and Dix River. In the Kentucky River floodplain, Huntington alluvium forms deep soils in frequently flooded meanders. Sandview-Faywood-Lowell soil associations represent 16% of the county and are prime agricultural areas found on broad hills in the Inner Bluegrass (Evans and Kelley 1996).

The Hills of the Bluegrass ecoregion, also called the Eden Hills, in the northeastern corner of Garrard County, is primarily composed of Culleoka-Eden soils and comprises 25% of the county. Culleoka-Eden soils are found primarily on ridges and steep side slopes in the Sugar Creek and Paint Lick Creek watersheds. In the narrow valleys and broader master stream channels of the Hills of the Bluegrass, Nolin soils form on alluvial floodplains and Elk soils form on stream terraces (Evans and Kelley 1996).

Outer Bluegrass landscapes are varied across the transition of physiography in Garrard County. Several soil districts in the Outer Bluegrass with Upper Ordovician and Silurian bedrock deserve distinct sub-region recognition, which can be described as Flatwoods and Dolomitic Foothills. In the Hills of the Bluegrass and the Outer Bluegrass, the Lowell-Faywood-Cythiana soils make up 26% of the county and are centrally located in Garrard County from the communities of Lancaster to Paint Lick. Lowell-Sandview-Faywood soils make up 8% of the county on rolling hills and short side slopes that form headwater drainages of intermittent and perennial tributaries of the Dix

River. Lawrence soil associations are found on the broad plateaus of the Outer Bluegrass usually on terraces where alluvial deposits on stream meanders have developed a fragipan that induces slow drainage and a perched water table. These hydric soils promote the formation of a local Flatwoods sub-region and associated wetland forest type. The Outer Bluegrass, in addition to the other soil series listed, consists of Shrouts-Beasley-Garlin soils. This soil association comprises 10% of the county and is present near the Irvine-Paint Creek Fault Zone where Silurian and Upper Ordovician rocks have been exposed. Erosion is rapid, forming argillaceous layers of seasonally wet marls and dry gravelly soils locally (Evans and Kelley 1996).

Soils of the Knobs-Norman Upland in Garrard County include Colyer-Trappist series (Dystrochrepts) which form silt loams in residual parent material of black shale of Devonian age (Muller and McComb 1986) and Carpenter-Lenberg series, which is formed from limestone residuum of the Borden Formation of Mississippian age. Trappist-Tilst-Lenberg soils are formed from residuum of black shale, and are of minor extent, forming 3% of Garrard County. Garmon-Carpenter-Lenberg soils compose 9% of Garrard County and are formed from calcareous shale and limestones of Mississippian strata. Floodplains and terraces in the Knobs-Norman Upland ecoregion are composed of Nolin and Newark soils (Evans and Kelley 1996) (Figures 7 and 8).

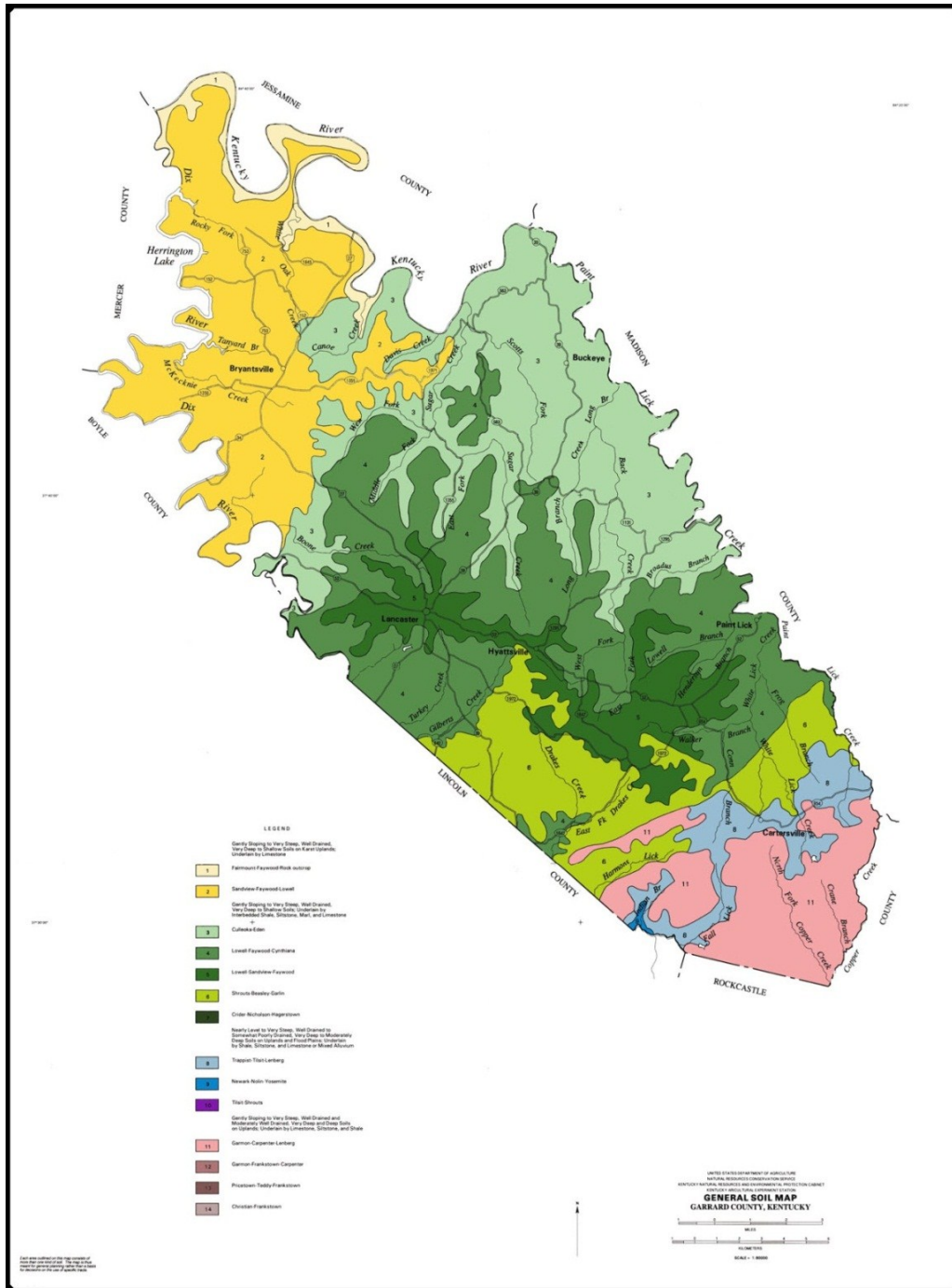


Figure 7. General soil map of Garrard County, Kentucky. Source: Evans, H. S. and J. A. Kelley, 1996. The soil survey of Garrard and Lincoln Counties, Kentucky. Natural Resources Conservation Service, Washington, D.C. See legend in Figure 8. Modified by Melanie G. Bentley.

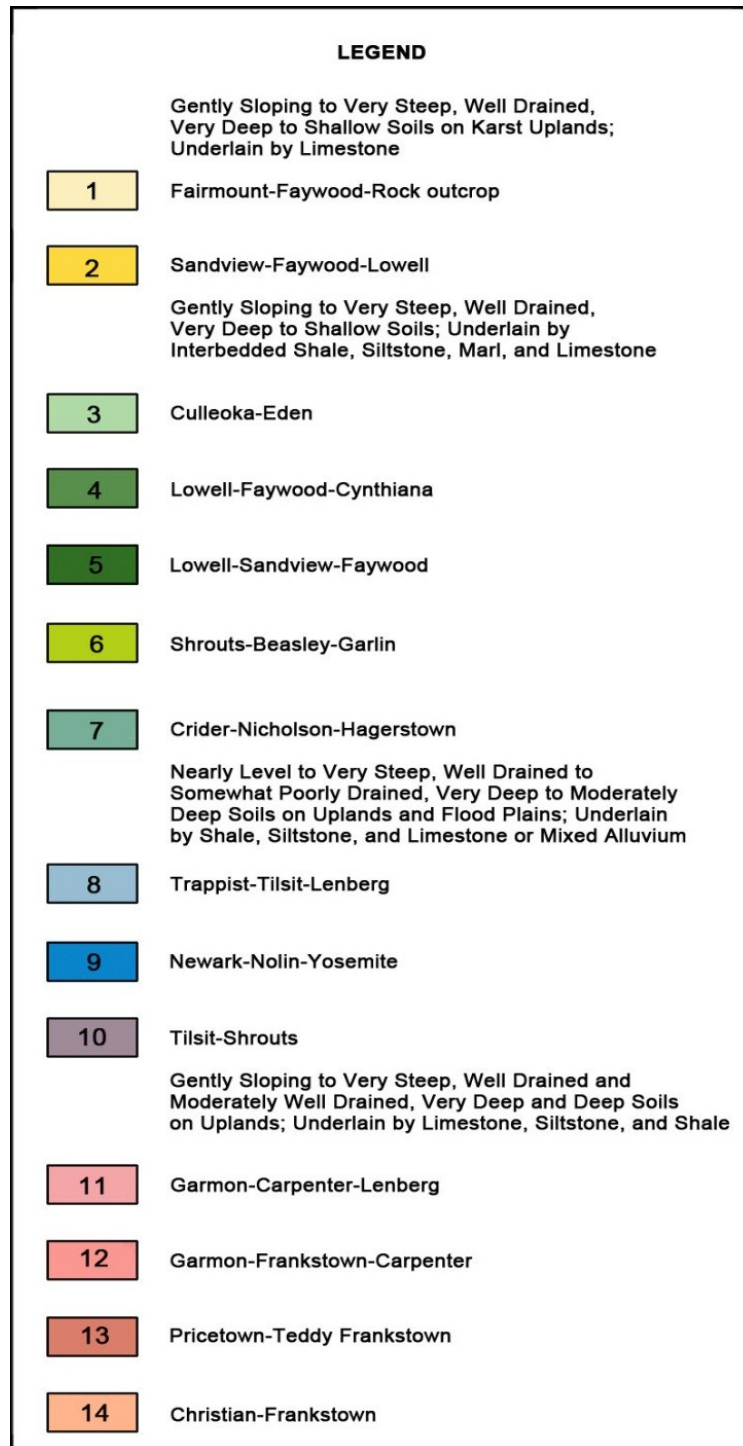


Figure 8. Legend for general soil map of Garrard County, Kentucky. Source: Evans, H. S. and J. A. Kelley, 1996. The soil survey of Garrard and Lincoln Counties, Kentucky. Natural Resources Conservation Service, Washington, D.C. Modified by Melanie G. Bentley.

Watersheds

Over half of Garrard County's boundaries are formed by major watersheds. Numerous smaller streams, named and unnamed, are found within the county (Figure 9). The Kentucky River forms the northern boundary, the Dix River forms much of the western boundary, and Paint Lick Creek forms much of the eastern boundary. Paint Lick Creek, Sugar Creek, White Oak Creek, and smaller tributaries drain northeast into the Kentucky River. The Dix River drains the southern end of Garrard County, with southwest drainages of Harmon's Lick, Drakes Creek, Copper Creek, Fall Lick Creek and other tributaries. Sinkholes are a common feature on the karst plains of Middle and Upper Ordovician strata. The northeast aspect of dominant drainages in the Kentucky River watershed consist of eroded valleys with moist and shady conditions in the northern portion of Garrard County, while the tributaries of the Dix River in the southern portion have a southwest aspect influencing the sunny and arid conditions within the Knobs and Outer Bluegrass.

Climate

Garrard County is representative of a continental climate with hot humid summers and mildly cold winters. Moisture is generally available from precipitation throughout the growing season, although severe droughts can develop during August–October. Ice storms are also a regular occurrence in central Kentucky over a 3–5 year interval. The Kentucky Historical Climate Data for 1971–2000 from the Dix Dam, KY, Weather Station was accessed for regional climate reporting (Midwest Climate Center 2013). Data indicates a median growing season above freezing of 203 days. Median last frost in

Land Use

Native Americans occupied the Garrard County region prior to European settlement with significant burial mounds identified near Camp Nelson, Paint Lick Creek, Drakes Creek, and White Lick Creek (Curtis 1928). Settlers of European descent arrived in the area in 1774 (Simpson 1992). Garrard County was designated as a county in 1797 with Lancaster as the county seat. Previously, the area was included in Mercer County, Madison County, and Lincoln County. The population in 2012 was estimated at 16,912 (United States Department of Commerce 2013). Logging and agriculture (both cash crop and livestock farming) are continued land use practices with logging occurring less frequently due to land conversion. Industrial development is of minor extent in the county; but, the Dix River Dam Hydro-electric Plant was completed in the 1920s, which formed Herrington Lake. In Garrard County, forests represent about 25% of the land area with agriculture and other uses representing the remaining 75%. Agricultural cash crops include soy beans (*Glycine max*), corn (*Zea mays*), tobacco (*Nicotiana tabacum*), and hay production. Livestock farming of cattle and horses is a common practice. Forests dominate the steep slopes of the Kentucky River Palisades physiographic subdivision of the Inner Bluegrass near the Kentucky River and Dix River, and on the slopes in the Knobs-Norman Upland Region (Evans and Kelley, 1996).

Vegetation and Flora

The vegetation and flora of the Bluegrass and Knobs regions in Kentucky have been the subject of a number of books, journal articles, and unpublished studies (theses, dissertations, and technical reports). Books that provide overviews as well as summaries

of previous studies include those by Braun (1950), Wharton and Barbour (1991), and Jones (2005). Journal articles focusing on the Bluegrass region include: Baskin and Baskin (1975, 1985); Bryant et al. (1980); Bryant (1973, 1981, 1983); Bryant et al. (2004); Campbell and Meijer (1989); Campbell et al. (1995); Clark and Bauer (2001); Evans (1889); McInteer (1952); Thompson et al. (2005); and Thompson and Green (2010). Journal articles focusing on the Knobs region include: Campbell et al. (1991); Cranfill (1991); Gunn (1959, 1968); Jones and Thompson (1986); Muller and McComb (1986); Murphy (1970); Rhoades et al. (2004, 2005); Thompson (2008); Thompson and Fleming (2004); Thompson et al. (2012); and, Weckman et al. (2003). Theses, dissertations, technical reports, and other kinds of publications related to the flora and vegetation of the Bluegrass or Knobs include: Beckett (1956); Campbell (1980, 1985); Campbell and Meijer (1989); Campbell et al. (1991); Davidson (1950); Day (1993); Feeman (2002); Gentry (1963); Godbey (1984); Greenwell (1935); Guetig (1993); Guhardja (1962); Harker et al. (1981); Husband (2000); Jones (2000, 2008); Linney (1882); Martin et al.(1979); McFarland (1941); Matthews (1961); Miller (1986); Smalley (1983); and Wharton (1945).

Of the above-listed works, the most significant, with species lists and vegetation descriptions or analysis, are the book by Braun (1950) which provided detailed overviews of the vegetation as well as some quantitative data; the Ph.D. dissertation on the Knobs Region (Wharton 1945) which listed 1014 species and provided vegetation descriptions and some quantitative data; the Ph.D. dissertation by Bryant (1973) on the vegetation of Panther Rock; the report on the flora and vegetation of the Kentucky River Palisades (Martin et al. 1979) which included a list of 741 species, vegetation descriptions, and

seven tables of quantitative data; the technical report on the Knobs by the Kentucky Nature Preserves Commission (Harker et al. 1981) which included information on the vegetation and flora of specific sites; the journal article on Eden Shale Belt (Bryant 1981) which provided quantitative data on the vegetation; the journal article by Bryant et al. (1980) which provided analyses of presettlement remnant stands in the Inner Bluegrass; the journal article by Bryant (1983) which compared forest stands in the Inner and Outer Bluegrass; the Forest Service report on the Eastern Highland Rim and Pennyroyal (Smalley 1983) in which the Knobs of Garrard County are included in the descriptions of land associations and landtypes; the thesis on Maywoods (Godbey 1984) which listed 407 species and provided vegetation descriptions; the journal article on the Knobs by Muller and McComb (1986) which included detailed community analyses; the journal article by Jones and Thompson (1986) which provided quantitative data on a mesic site in the Knobs; the journal articles by Campbell and Meijer (1989) and by Campbell et al. (1995) on the vegetation and flora of Palisades sites; the book on the Inner Bluegrass (Wharton and Barbour 1991) which included a species list, community descriptions, and vegetation analysis; the Berea Ranger District inventory (Campbell et al. 1991) which provided rare species information and site descriptions for the Knobs; the thesis by Day (1993) on the vegetation of Bernheim Forest; the thesis by Husband (2000) on the vegetation of Floracliff Nature Sanctuary; the book on the state flora (Jones 2005) which provided species lists and vegetation descriptions; and the journal publication on an abandoned limestone quarry in Garrard County (Thompson and Green 2010) which listed 209 species. Of these publications, the only ones that included quantitative data on the vegetation of Garrard County were those by Wharton and Barbour (1991) in which data

for four sites are presented, and by Muller and McComb (1986) in which the data from one site in Garrard County is combined with that from seven other sites in seven different counties.

Forest Regions

The forest regions in Garrard County, Kentucky, have been variously classified. Braun (1950) considered the Bluegrass region and the southern and western sections of the Knobs as part of the Western Mesophytic Forest Region, and the eastern section of the Knobs as part of the Mixed Mesophytic Forest Region. K uchler (1964) treated the regions similarly, but he referred to the Western Mesophytic Forest Region of Braun (1950) as the Oak-Hickory Forest Region. In a revision of the forest regions of Braun (1950), Dyer (2006) treated the Bluegrass as part of the Beech-Maple-Basswood Forest Region, and the Knobs as part of the Mesophytic Forest Region (Figure 10). All these authors, in spite of differences in interpretations, point out that the typical Bluegrass forests are quite distinct from the mesic sites in the Knobs. Specifically, the geographic gradients of climate, geology, soils, and topography promote Bluegrass forests often characterized by *Acer saccharum*-*Tilia americana*-*Fraxinus americana*-*Aesculus glabra*-*Carya* spp.-*Quercus* spp., while the more mesic sites in the Knobs forests are often dominated by *Tsuga canadensis*-*Fagus grandifolia*-*Aesculus flava*-*Carya* spp.-*Quercus* spp.-*Acer* spp. (Braun 1950; K uchler 1964). Wharton (1945) noted some scattered Mixed Mesophytic communities occur in the Knobs as far west as Boyle and Casey counties. Swampy flatlands, sinking creek systems, and other similar sites within the Bluegrass and the Knobs promote a very different community type, one dominated by

Quercus bicolor-Q. palustris-Fraxinus pensylvanica-Acer rubrum-Liquidamber styraciflua-Diospyros virginiana (Meijer et al. 1981). These upland, slope, riparian, and flatwoods forests, along with more open communities of xeric limestone prairie, cedar glades, rock outcrops, and depressional wetlands contribute to the overall plant diversity of Garrard County.

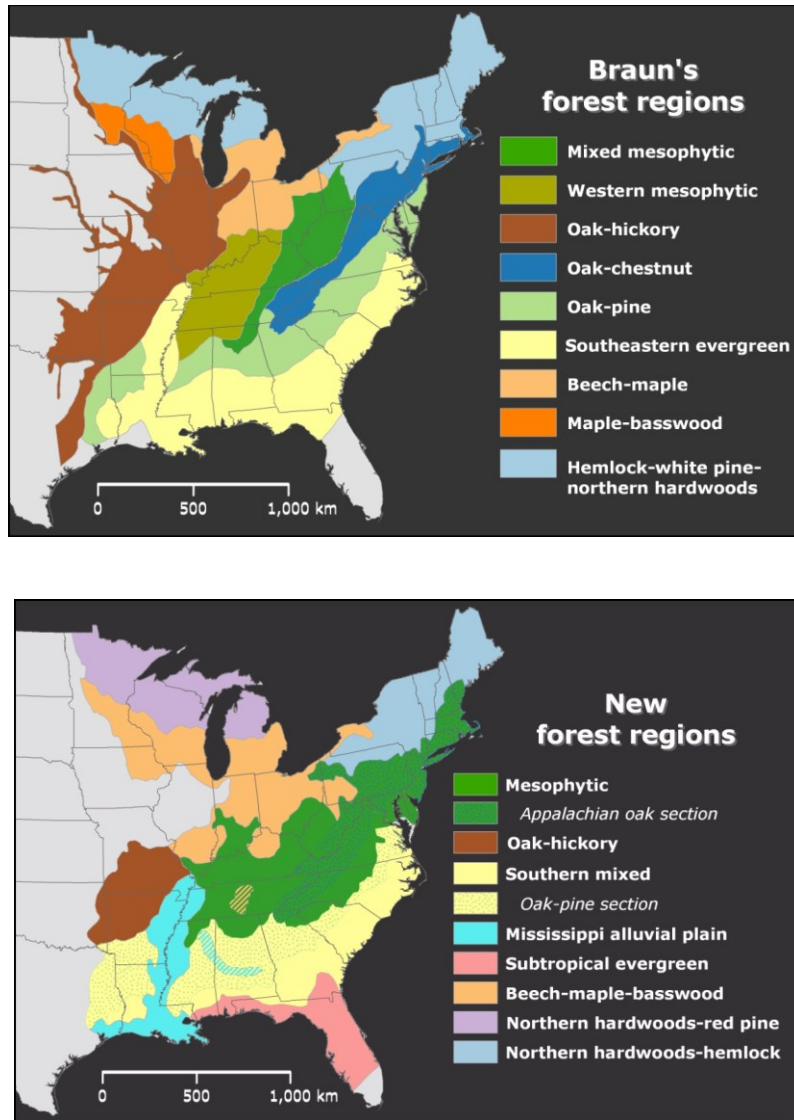


Figure 10. Revision of Braun's Eastern Deciduous Forest regions. Source: Dyer, J.M. 2006. Revisiting the *Deciduous Forests of Eastern North America*. *BioScience* 56: 341-352.

Study Sites

The following study sites were used as primary collecting areas of vascular plants within Garrard County (Figure 11). These sites contained various representative plant communities of regional flora. The NRCS Web Soil Survey (Soil Survey Staff 2013) was used to assess the soils of individual study sites as detailed below.

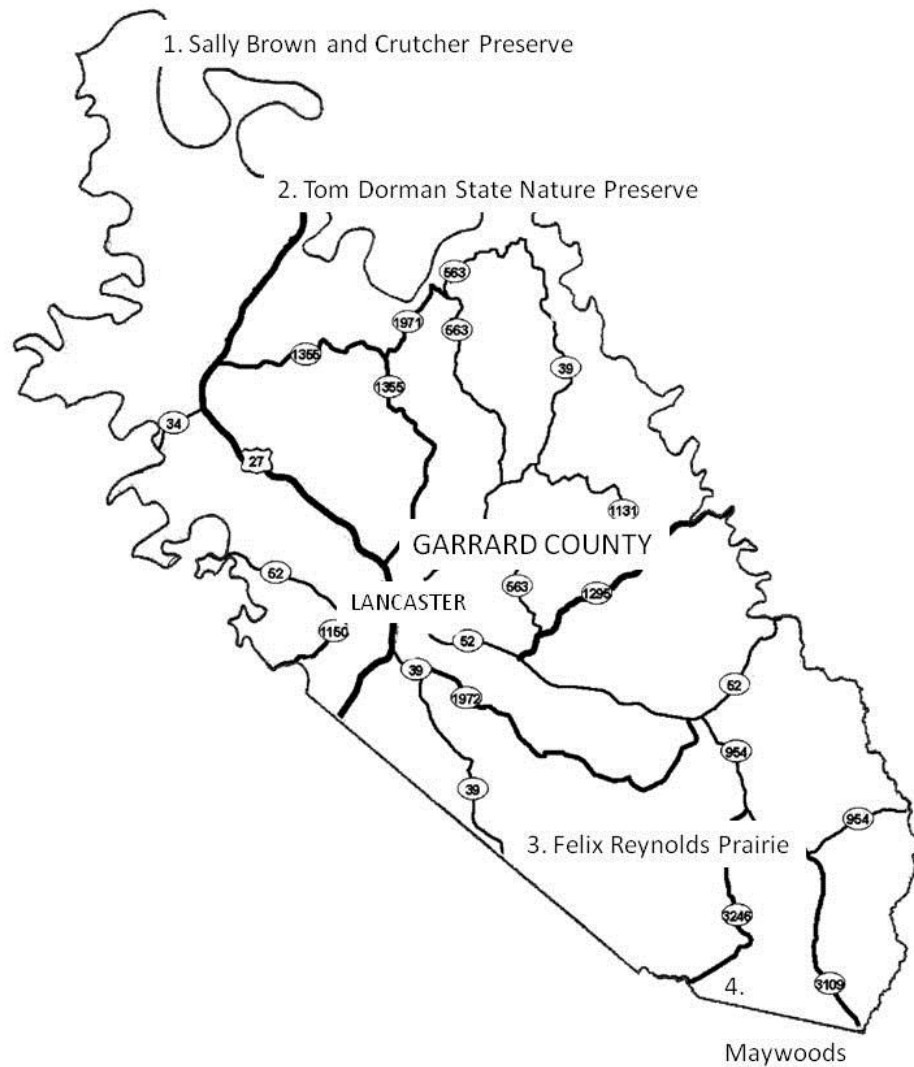


Figure 11. Study Sites in Garrard County, Kentucky. Modified by Melanie G. Bentley.

Tom Dorman State Nature Preserve

Tom Dorman State Nature Preserve (herein, Tom Dorman) is located in the White Oak Creek Watershed of the Kentucky River between 37°46'54.00" and 37°45'34.00"N latitude and between 84°38'50.00" and 84°36'57.00"W longitude. Tom Dorman contains about 364.2 ha (900 acres) in Garrard and Jessamine counties, and is accessed at the end of Jess Brim Road, 1.14 km (0.71 miles) north of Rogers Road (State Highway 1845). The Garrard County portion of Tom Dorman contains 330.2 ha (816 acres) composed primarily of seven major soil types that comprise 99% of the total area. The major soil types are Rock outcrop-Fairmount complex, 50 to 120 percent slopes, (107 ha, 264.5 acres), Faywood-Fairmont complex, phosphatic, 12 to 25 percent slopes, eroded, very rocky, (89.9 ha, 222.1 acres), Fairmount-Faywood-Rock outcrop complex, 25 to 50 percent slopes, eroded, (59.9 ha, 148.1 acres), Fairmount-Faywood complex, phosphatic, 6 to 12 percent slopes, eroded, rocky, (27.7 ha, 68.4 acres), Lowell silt loam, phosphatic, 6 to 12 percent slopes, eroded, (24.6 ha, 60.7 acres), Elk silt loam, 2 to 6 percent slopes, rarely flooded, 9.3 ha (22.9 acres), and Bluegrass-Maury silt loams, 2 to 6 percent slopes, (7.6 ha, 18.7 acres).

The Nature Conservancy's Sally Brown and Crutcher Preserve

Sally Brown and Crutcher Preserve (herein, Sally Brown) are contiguous in the Kentucky River Watershed between 37° 49' 48.49" and 37°48'49.00"N latitude and between 84°42'58.00" and 84°40'38.00"W longitude. These preserves are represented by 307.2 ha (759 acres) of which about 259 ha (640 acres) are in Garrard County and are accessed at the end of Bowman's Bottom Road 2.57 km (1.60 miles) north of High

Bridge Road. Sally Brown is characterized by fourteen soil types of which nine soil complexes represent 95.3% of the total area. The major soil series are Rock outcrop-Fairmount complex, 50 to 120 percent slopes (83.5 ha, 206.3 acres), Faywood-Fairmount complex, phosphatic, rocky, 12 to 25 percent slopes, eroded (66.2 ha, 163.7 acres), Chenault gravelly silt loam, 6 to 12 percent slopes (24.9 ha, 61.5 acres), Nolin silt loam, frequently flooded (20.5 ha, 50.6 acres), Chenault-Faywood complex, phosphatic, 12 to 25 percent slopes, eroded, rocky (17.4 ha, 42.9 acres), Faywood-Fairmount complex, phosphatic, 6 to 12 percent slopes, eroded, rocky (12.9 ha, 31.8 acres), Fairmount-Faywood-Rock outcrop complex, 25 to 50 percent slopes, eroded (8.8 ha, 21.8 acres), Chenault gravelly silt loam, 2 to 6 percent slopes (6.3 ha, 15.6 acres), and Fairmount silty clay loam, 6 to 12 percent slopes, eroded, very rocky (5.3 ha, 13.2 acres). Typical Inner Bluegrass Maury-Bluegrass silt loams compose only about 2 % of the landscape.

The Felix Reynolds Prairie

The Felix Reynolds Tract (herein, Reynolds Prairie) is located in the Drakes Creek Watershed of the Dix River between 37°32'55.00" and 37°32'0.00"N latitude and between 84°31'19.00" and 84°30'42.00"W longitude. This farm tract contains about 64.7 ha (160 acres) and is accessed at the end of Hillside Road, 0.88 km (0.55 miles) off of Fall Lick Road. Reynolds Prairie is characterized by six soil types of which four soil series represent 94.6% of the total area. The four major soil types are Shrouts-Cynthiana complex 12 to 25 percent slopes, severely eroded, rocky (39.7 ha, 98.1 acres), Shrouts silty clay loam 6 to 12 percent slopes, eroded (12.6 ha, 31.3 acres), Faywood-Shrouts

complex 12 to 25 percent slopes, eroded, rocky (5.6 ha, 14.0 acres), and Nolin silt loam, frequently flooded (4.9 ha, 12.2 acres).

Maywoods Environmental and Educational Laboratory

Maywoods Environmental and Educational Laboratory (Maywoods) is located in the Fall Lick Creek Watershed of the Dix River between 37°29'35.00" and 37°28'0.00"N latitude and between 84°26'48.00" and 84°23'34.00"W longitude. Maywoods encompasses 687 ha (1700 acres) in both Garrard and Rockcastle Counties and is accessed at the end of Maywoods Road, 0.8 km (0.5 miles) off Hamilton Valley Road. The Garrard County portion of Maywoods comprises 378 ha (935 acres) of which five major soil types represent 97% of the total area. Additionally, the surface area of the lake represents 3.76 ha (9.3 acres). The major soil types include Garmon Channery silt loam 25 to 80 percent slopes, rocky (272.7 ha, 575 acres), Carpenter-Lenberg complex 12 to 30 percent slopes, eroded (97.1 ha, 240 acres), Colyer-Trappist complex 25 to 60 percent slopes eroded, very rocky (19 ha, 47 acres), Gilpin silt loam, 6 to 12 percent slopes, eroded (14.6 ha, 36 acres), and Jessietown silt loam 2 to 6 percent slopes (2.8 ha, 7 acres).

CHAPTER III

MATERIALS AND METHODS

This study of the vascular flora in Garrard County, Kentucky, is based on the collections made during 64 field trips throughout the growing seasons (March-October) of 2010 (25 trips), 2011 (31 trips), 2012 (4 trips), and 2013 (4 trips). Collection trips were scheduled at an interval of every three days to every other week, so each plant species could be obtained in full flower or fruit. The different kinds of habitats delineated during preliminary reconnaissance were visited on a regular basis. Queries of the EKY database (Pace et al. 2013) and the *Atlas of Vascular Plants in Kentucky* (Campbell and Medley 2005, 2012) were used to locate collections in state herbaria from Garrard County accessioned in the herbaria at the University of Kentucky (KY), Eastern Kentucky University (EKY), and Berea College (BEREA). In order to sample across the physiographic variation within the county, four primary study sites were chosen for extensive surveys: The Felix Reynolds Prairie, Maywoods Environmental and Educational Laboratory, Sally Brown and Crutcher Preserve, and Tom Dorman State Nature Preserve (Figure 11). The random meander technique (Cropper 1993) was employed to survey natural areas and ruderal habitats within the four study sites. This technique involves the continuation of walking surveys until a point of diminishing returns is reached, when no new species are discovered. Additional surveys of roadside plant communities throughout the county were also used to sample the physiographic and vegetation gradients. Specimens were collected in duplicate whenever possible. Cuttings of stems were used instead of excising roots if the plant population was isolated and

consisted of less than 20 perennial individuals. Photographic documentation instead of specimen collection was used in the case of rare, threatened, or endangered species. Notes were taken on the vegetation types encountered, but no quantitative evaluations were included. Specimens were pressed after collection and standard herbarium techniques were used to dry, freeze, and label the specimens.

Descriptive keys from Jones (2005) were used to identify the taxa. Regional authorities (Drs. Julian Campbell, Ronald L. Jones, and Ralph L. Thompson) assisted with the identification of difficult taxa. Comparisons to specimens in EKY and other herbaria aided in understanding morphological variations at the species level and determining varieties and subspecies. Nomenclature follows Jones (2005). The species list prepared from these collections was combined with records from previous accessions to assemble an annotated checklist of all known species documented in Garrard County.

To predict the plant species richness of Garrard County, a species-area curve was utilized, $S=272A^{0.113}$ (Wade and Thompson 1991); where S is the number of species predicted and A is the area in hectares. This formula is applicable to central Kentucky and predicted an estimated 954 species for Garrard County.

Non-native species status was based on Jones (2005) and the Kentucky Exotic Pest Plant Council (KY EPPC 2013). Rare species status was based on the list maintained by the Kentucky State Nature Preserves Commission (KSNPC 2010a, 2012a).

The plant communities of Kentucky have been described by the Kentucky State Nature Preserves Commission (KSNPC 2010b), and the rarest and most threatened of the communities are listed by KSNPC (2010a, 2012a).

CHAPTER IV

RESULTS

Flora

An analysis of the plant specimens collected in the field, along with herbaria documentation, produced a list of 961 taxa of vascular plants in 494 genera and 137 families for Garrard County (Appendix I). This total was +1 % of the predicted number of 954 using the species area curve (Wade and Thompson 1991). Of the 961 taxa listed in Appendix I, 212 were not found during this study, but were vouchered by other collectors. Across the physiographic transition, 626 species were documented in the Bluegrass (including Kentucky River Palisades, Inner Bluegrass, Hills of the Bluegrass, Outer Bluegrass, Flatwoods, Dolomitic Foothills) and 410 were documented in the Knobs. Many species were vouchered in both regions.

There were 30 species of pteridophytes, 4 gymnosperms, 217 monocots, and 710 dicots identified from Garrard County (Table 1). Five plant families represented 39% of the total flora: Asteraceae (129 taxa), Poaceae (89 taxa), Cyperaceae (60 taxa), Fabaceae (53 taxa), and Rosaceae (44 taxa). Genera with highest species richness (e.g., seven species or more), were *Carex* (37), *Polygonum* (14), *Quercus* (13), *Symphyotrichum* (13), *Solidago* (10), *Viola* (10), *Lespedeza* (9), *Desmodium* (8), *Dichantheium* (8), *Helianthus* (8), *Hypericum* (7), *Eupatorium* (7), *Prunus* (7), and *Ranunculus* (7).

Table 1. Taxonomic distribution of vascular plants of Garrard County, Kentucky.

Divisions	Families	Genera	Species	Native	Exotic	%
Equisetophyta	1	1	1	1	0	0.10
Lycopodiophyta	1	1	2	2	0	0.21
Polypodiophyta	10	19	27	27	0	2.81
Coniferophyta	2	3	4	4	0	0.42
Magnoliophyta	123	470	927	759	168	96.46
Monocotyledonae	24	92	217	181	34	22.58
Dicotyledonae	99	378	710	578	134	73.88
Total:	137	494	961	793	168	100.00

Special Concern, Threatened, and Endangered Species

According to KSNPC (2012a), 16 species documented in Garrard County were of Special Concern (SC), Threatened (T), Endangered (E), or Historic (H): *Agalinis skinneriana* (H), *Bouteloua curtipendula* (SC), *Carex crawei* (SC), *Castanea dentata* (E), *Deschampsia caespitosa* (E), *Elymus svensonii* (T), *Juglans cinerea* (T), *Lonicera prolifera* (T), *Onosmodium hispidissimum* (E), *Phlox bifida* subsp. *stellaria* (E), *Prenanthes crepidinea* (SC), *Schizachne purpurascens* (T), *Silphium pinnatifidum* (SC), *Spiranthes magnicamporum* (T), *Viburnum molle* (SC), and *Viola septemloba* subsp. *egglestonii* (SC). These species are indicated in Appendix I by an exclamation mark (!).

Non-native Species

Non-native plants in Garrard County were represented by 168 species, or 17.5% of the total documented flora. Of these non-native species, 95 were categorized as Severe Threat, Significant Threat, Moderate Threat, or Watch List (KY EPPC 2013). Thirty-two species are listed as Severe Threats (Appendix II). Two other species, *Ligustrum obtusifolium* and *Rhamnus davurica*, are spreading in Garrard County, and are likely to be listed in future updates of the exotic plants list.

Update of Maywoods Environmental and Educational Laboratory Flora

In a previous study of Maywoods, Godbey (1984) listed 407 species for the site, with 374 native, 33 non-native, and one state-listed species. This study added 107 species to the flora of Maywoods (Appendix III), including 15 new exotic species: *Anthoxanthum odoratum*, *Cyperus iria*, *Galinsoga quadriradiata*, *Kyllinga pumila*, *Lespedeza cuneata*, *Lonicera maackii*, *Microstegium vinimeum*, *Najas minor*, *Oxalis corniculata*, *Poa pratensis*, *Potentilla recta*, *Rosa multiflora*, *Silene latifolia*, *Thlaspi alliaceum*, and *Veronica serpyllifolia*. A state-listed rare species (*Juglans cinerea*) was also documented. Several new records were found in the prairie restoration area near the southwest boundary, including native *Polygala sanguinea*, as well as *Echinacea pallida* and *Silphium pinnatifidum* that are likely persisting or spreading from plantings.

The one state-listed species found at Maywoods by Godbey (1984) was *Panax quinquefolius*, at the time considered Threatened in the state (Branson et al. 1981). It is no longer listed by the KSNPC (2012a). This species was not observed at Maywoods, or at any other site in Garrard County. Godbey (1984) reported seven species of

Orchidaceae from Maywoods, but did not collect specimens of *Cypripedium pubescens* (= *C. calceolus*) or *Galearis spectabilis* (= *Orchis spectabilis*). The only orchids observed during this study at Maywoods were *Cypripedium acaule*, *Goodyera pubescens*, *Liparis liliifolia*, and *Tipularia discolor*.

Vegetation

The following comments on the vegetation types identified in Garrard County are based on observations made during this study, as quantitative sampling was not done. The plant communities of grasslands, forests, and ruderal habitats vary by geologic substrate and soils, with acidic conditions predominating in much of the Knobs, and calcareous conditions in the Bluegrass (Braun 1950). Forests occupy landforms throughout the county and are especially prevalent along streams and on steep slopes. Non-forested habitats of the county include grass and herb-dominated sites associated with limestone prairie, limestone and shale outcrops, and woodland openings. Wetland sites such as pond margins and drainage ditches were dominated by herbs and/or shrubs. Ruderal habitats were common and included lawns, fields, pastures, roadsides, and other disturbed sites.

Bluegrass Region

On drier sites in the Bluegrass region of Garrard County (i.e., where bedrock outcrops on ridgetops or steep slopes), the forest composition includes *Acer nigrum*, *A. saccharum*, *Carya glabra*, *Cladratis kentuckea*, *Juniperus virginiana*, *Fraxinus quadrangulata*, *Quercus imbricaria*, *Q. muhlenbergii*, *Q. stellata*, *Q. velutina*, *Robinia*

pseudoacacia, and *Ulmus thomasi*. These communities are similar to those described by the KSNPC (2010a, b) as Calcareous Sub-xeric Forest.

On mesic slopes, the Bluegrass forests are typically composed of *Acer saccharum*, *Aesculus glabra*, *Carya laciniosa*, *Celtis occidentalis*, *Fraxinus americana*, *F. quadrangulata*, *Gleditsia triacanthos*, *Gymnocladus dioicus*, *Juglans nigra*, *Juniperus virginiana*, *Prunus serotina*, *Quercus muhlenbergii*, *Q. shumardii*, and *Ulmus americana*. A particularly rich assemblage of trees were found in ravines along the Kentucky River with *Acer nigrum*, *A. rubrum*, *A. saccharum*, *Aesculus flava*, *Carya cordiformis*, *C. laciniosa*, *C. ovata*, *Cladratis kentuckea*, *Fagus grandifolia*, *Fraxinus americana*, *F. quadrangulata*, *Liriodendron tulipifera*, *Quercus alba*, *Q. muhlenbergii*, *Q. rubra*, *Q. shumardii*, *Tilia americana*, *Ulmus americana*, and *U. rubra*. These communities are similar to those described by the KSNPC (2010a, b) as Calcareous Mesophytic Forest. A similar community, the Bluegrass Mesophytic Cane Forest, has been identified for Garrard County (KSNPC 2010b) and is considered Endangered.

Swamp forests and flatwoods were found in the Outer Bluegrass of Garrard County and tend to be similar to those described for the Knobs. Flatwoods were found to contain *Acer rubrum*, *Carya ovata*, *C. laciniosa*, *Diospyros americana*, *Fraxinus pennsylvanica*, *Platanus occidentalis*, *Quercus alba*, *Q. bicolor*, *Q. palustris*, and *Q. stellata*. Near the Kentucky River and along major streams a floodplain forest develops with *Acer negundo*, *A. saccharinum*, *Fagus grandifolia*, *Fraxinus pennsylvanica*, *Liriodendron tulipifera*, *Platanus occidentalis*, *Populus deltoides*, *Tilia americana*, and *Ulmus americana*. These flatwoods, streambank, and terrace communities are similar to those described by the KSNPC (2010b) as Wet Flatwoods and Riparian Forest.

Native grasslands were found along xeric cliffs of the Inner Bluegrass in the Kentucky River Palisades and also in the Outer Bluegrass in the Dolomitic Foothills. Stunted trees and shrubs form an ecotone or transition zone to closed canopy communities; *Celtis tenuifolia* and *Juniperus virginiana* are indicators. Characteristic herbaceous plants were *Andropogon gerardii*, *Asclepias tuberosa*, *A. viridiflora*, *A. verticillata*, *Blephilia ciliata*, *Bouteloua curtipendula*, *Calamintha glabella*, *Carex crawei*, *Chamaecrista fasciculata*, *Danthonia spicata*, *Dichanthelium acuminatum*, *Eleocharis compressa*, *Erigeron pulchellus*, *Fragaria virginiana*, *Galactia volubilis*, *Hedyotis nigricans*, *Hypericum dolobriforme*, *Liatris squarrosa*, *Lithospermum canescens*, *Leavenworthia uniflora*, *Lespedeza hirta*, *L. repens*, *Lobelia spicata*, *Monarda fistulosa*, *Orbexilium onobrychis*, *Panicum anceps*, *P. flexile*, *Penstemon hirsutus*, *Plantago aristata*, *Pynanthemum tenuifolium*, *Ratibida pinnata*, *Rudbeckia fulgida*, *Ruellia humilis*, *Schizachyrium scoparium*, *Scirpus pendulus*, *Scutellaria parvula*, *Silphium terebinthinaceum*, *S. trifoliatum*, *Sisyrinchium albidum*, *Solidago nemoralis*, *Spiranthes magnicamporum*, *Sporobolus vaginiflorus*, and *Symphyotrichum pilosum* var. *pringlei*. This plant community is similar to Limestone/Dolomite Prairie described by the KSNPC and is considered Endangered (KSNPC 2010a, 2012a).

Ruderal habitats in the Bluegrass form widespread exotic landscapes and are associated with agricultural land practices and human habitation. Trees found along fencerows and disturbed roadsides are *Acer negundo*, *A. saccharinum*, *Ailanthus altissima*, *Albizia julibrissin*, *Celtis occidentalis*, *Gleditsia triacanthos*, *Maclura pomifera*, *Morus alba*, *Platanus occidentalis*, *Prunus serotina*, *Robinia pseudoacacia*, and *Ulmus americana*. Dominant grasses in pastures and hayfields are *Andropogon*

virginicus, *Dactylis glomerata*, *Dichanthelium clandestinum*, *Festuca arundinacea*, *Panicum anceps*, *Poa pratensis*, *Sorghum halepense*, and *Tridens flavus*. Herbs growing in disturbed soil and degraded communities are *Alliaria petiolata*, *Allium vineale*, *Ambrosia artemesiifolia*, *A. trifida*, *Asclepias syriaca*, *A. viridis*, *Cichorium intybus*, *Coronilla varia*, *Daucus carota*, *Desmodium paniculatum*, *Dipsacus fullonum*, *D. laciniatus*, *Elephantopus carolinianus*, *Helianthus tuberosus*, *Hesperis matronalis*, *Hypericum perforatum*, *Lathyrus latifolius*, *Melilotus alba*, *M. officinalis*, *Rudbeckia hirta*, *R. triloba*, *Ruellia strepens*, *Rumex crispus*, *Sisymbrium officinale*, *Stellaria media*, *Symphyotrichum pilosum*, *Taraxacum officinale*, *Trifolium pratense*, *T. repens*, *Verbascum thapsus*, and *Viola sororia*. Understory shrubs can dominate the ground layer in disturbed forests and include *Hibiscus syriacus*, *Ligustrum sinense*, *L. obtusifolium*, *Lonicera maackii*, and *Rhamnus davurica*. Widespread and prevalent invasive vines are *Euonymus fortunei* and *Lonicera japonica*.

Knobs Region

On the highest and driest ridges and knobs of Garrard County, the forest was characterized by *Amelanchier arborea*, *Carya glabra*, *C. tomentosa*, *Juniperus virginiana*, *Pinus echinata*, *P. virginiana*, *Populus grandidentata*, *Quercus alba*, *Q. coccinea*, *Q. montana*, *Q. stellata*, *Q. velutina*, *Vaccinium pallidum*, and *V. stamineum*, while the upper and middle slopes were often dominated by *Quercus alba* as well as *Acer rubrum*, *A. saccharum*, *Cercis canadensis*, *Cornus florida*, *Liriodendron tulipifera*, *Nyssa sylvatica*, *Ostrya virginiana*, *Oxydendrum arboreum*, *Quercus rubra*, *Rhus copallinum*, *Sassafras albidum*, and *Ulmus alata*. These communities are similar to those described

by the KSNPC (2010b) as Xeric Virginia Pine, Shale Barrens (open woodland), or Appalachian Sub-Xeric Forest.

On the lower slopes and protected ravines within Garrard County, the typical trees were *Acer rubrum*, *A. saccharum*, *Aesculus flava*, *Carya cordiformis*, *C. glabra*, *C. laciniosa*, *C. ovata*, *C. tomentosa*, *Fagus grandifolia*, *Fraxinus americana*, *Liriodendron tulipifera*, *Nyssa sylvatica*, *Quercus alba*, *Q. coccinea*, *Q. montana*, *Q. rubra*, *Q. velutina*, and *Tsuga canadensis*. These communities are similar to those described by the KSNPC (2010b) as Appalachian Mesophytic and Hemlock-mixed Forest.

The Knobs floodplains within Garrard County included species typical of hydric soils such as *Betula nigra*, *Acer rubrum*, *A. saccharinum*, *Carya laciniosa*, *Fraxinus pennsylvanica*, *Liquidamber styraciflua*, *Liriodendron tulipifera*, *Nyssa sylvatica*, *Platanus occidentalis*, *Quercus alba*, *Q. coccinea*, *Q. imbricaria*, *Q. palustris*, *Q. velutina*, *Salix nigra*, and *Salix sericea*. These communities are similar to those described by the KSNPC (2010b) as Wet Flatwoods and Riparian Forests.

Ruderal habitats in the Knobs are found on roadsides, hayfields, pastures, and near human habitations. *Pinus virginiana*, *Prunus serotina*, and *Quercus* spp. are common trees found along fences and along field edges. *Andropogon virginicus*, *Anthoxanthum odoratum*, *Danthonia spicata*, *Microstegium vimineum*, *Panicum anceps*, *Poa pratensis*, *Sorghum halepense*, and *Tridens flavus* are dominant grasses in hayfields. Other herbs include *Allium vineale*, *Galium aparine*, *Plantago lanceolata*, *Potentilla recta*, *Cichorium intybus*, *Daucus carota*, *Trifolium repens*, *T. pratense*, *Melilotus alba*, *M. officinalis*, *Rumex crispus*, and *Taraxacum officinale*. Exotic shrubs in this

anthropogenically disturbed community are *Lonicera maackii* and *Rosa multiflora*.

Lonicera japonica is particularly ubiquitous in ruderal habitats of the Knobs Region.

CHAPTER V

DISCUSSION

General Flora

The final list of 961 taxa is considered to be a good representation of the Garrard County flora. The results exceed the predicted total of 954 species estimated to be present based on the species-area curve (Wade and Thompson 1991). In addition, when compared with other county floras from similar physiographic regions, Garrard County has the second highest species to square kilometer ratio (Table 2).

Database searches carried out in preparation for this study revealed that about 500 species had been documented from Garrard County. Primary collectors of Garrard County specimens have been Donna Godbey (517 specimens at EKY), Ralph L. Thompson (577 specimens at BERE), and Mary E. Wharton (116 specimens at EKY). Examination of these specimens, in conjunction with 37 specimens from various collectors at KY, produced 212 additional species for the county.

Non-native Species

Exotic species, many which are invasive, are very prevalent in disturbed habitats across Kentucky. In Garrard County, exotic species are concentrated throughout the Bluegrass in disturbed forests, old fields, roadsides, and other ruderal habitats. Exotic species of severe threat are plants that can invade and compete with native vegetation in natural plant communities as well as ruderal habitats (KY EPPC 2013). Invasive species that warrant monitoring and removal from forested lands in Garrard County are

Ailanthus altissima, *Alliaria petiolata*, *Clematis terniflora*, *Duchesnea indica*, *Euonymus alata*, *E. fortunei*, *Glechoma hederacea*, *Lamium purpureum*, *Ligustrum obtusifolium*, *Lonicera japonica*, *L. maackii*, *Microstegium vimineum*, *Pueraria montana*, *Pyrus calleryana*, *Rhamnus davurica*, *Rosa multiflora*, and *Stellaria media*. Invasive species that are spreading in grasslands and open habitats in Garrard County include *Chrysanthemum leucanthemum*, *Festuca arundinacea*, *Lespedeza cuneata*, *Melilotus alba*, *M. officinalis*, *Poa pratensis*, and *Thlaspi alliaceum*. Non-native species invading water courses and wetlands include *Lythrum salicaria*, *Mentha × piperita*, and *Perilla frutescens*. *Lonicera standishii* has become established on clifflines near the Kentucky River.

Table 2. Species richness of selected county floras in Kentucky. Abbreviations: ILP—Interior Low Plateaus; CP—Cumberland Plateau; WCF—Western Coal Fields.

County	Physiographic Province	Sq km	# Species (species/sq km)
Carroll County (Miller 1986)	ILP	355	471 (1.32)
Clark County (Beckett 1956)	ILP	660	713 (1.08)
Clinton County (Gorton 2000)	ILP, CP	534	877 (1.64)
Estill County (Guetig 1993)	ILP, CP	663	853 (1.27)
Garrard County (this study)	ILP	606	961 (1.59)
Hardin County (Cranfill 1991)	ILP, WCF	1632	1,126 (0.69)
Henry County (Gentry 1963)	ILP	754	575 (0.76)
Jackson County (Abner 1993)	CP	899	671 (0.75)
Jessamine County (McFarland 1941)	ILP	451	661 (1.47)
Nelson County (Greenwell 1935)	ILP	1098	863 (0.76)

Rare Species Overview

Some rare plant species were found at only one site in Garrard County. *Agalinis skinneriana* was found at a single locality in a prairie remnant (Knobs Region) on Jones

Road. A forest remnant on Braudus Branch Road is the only known site for *Aristolochia serpentaria*. The Sub-xeric Forest at Sally Brown and Crutcher Preserve provide habitat for *Draba ramosissimum* and *Schizachne purpuracens*. The Drakes Creek watershed contained many grassland species at various prairie remnants with single localities for *Guara biennis*, *Ophioglossum engelmannii*, *Orbexilum onobrychis*, *Quercus macrocarpa*, *Silphium terebinthinaceum*, *Ranunculus fascicularis*, and *Zizia aurea*. Tom Dorman State Nature Preserve contained *Allium cernuum*, *Fleischmannia incarnata*, and *Viola septemloba* subsp. *egglestonii*. Shrubs found at only one location included *Physocarpus opulifolius*, *Ptelea trifoliata*, and *Zanthoxylum americanum*. *Castanea dentata* and *Juglans cinerea* are rare trees in the county and were found only at Maywoods in the Knobs Region. Rare trees occurring only along the Kentucky River Palisades were *Cladrastis kentuckea* and *Ulmus thomasii*.

Several rare species have been previously documented or reported for Garrard County but were not discovered during this study. *Agrimonia gryposepala*, a Threatened species in the state, is currently listed in the KSNPC database for Garrard County. This record is based on a collection by Godbey (1984) from Maywoods, but this specimen has been annotated as *Agrimonia rostellata*. There are several other species listed by the KSNPC for Garrard County for which no voucher specimen has been found: *Carex hystericina*, *Lesquerella globosa*, *Malvastrum hispidum*, *Muhlenbergia cuspidata*, *Viburnum rafinesquianum* var. *rafinesquianum*, and *Vitis labrusca* (KSNPC 2012b).

Several plant species listed by the U.S. Fish and Wildlife Service (2014) have been documented in nearby counties and potentially could occur in Garrard County. These species include *Arabis perstellata* (Endangered), *Leavenworthia exigua* var.

laciniata (proposed Threatened), *Lesquerella globosa* (proposed Endangered), *Solidago shortii* (Endangered), and *Trifolium stoloniferum* (Endangered). In addition, *Trifolium kentuckiense* is a recently described species from nearby Anderson and Woodford counties (Chapel and Vincent 2013), and could possibly occur in Garrard County.

Rare Species Accounts

Additional details on noteworthy plant species of Garrard County are provided below with designated state listing according to the KSNPC (2012a). Photographs of eight of these species are provided in Appendix IV.

Agalinis skinneriana (Wood) Britton (Scrophulariaceae). Historic. (Figures 12—15)

Pale false foxglove is an annual forb that inhabits rocky woods and barrens of the Interior Low Plateaus (Jones 2005). This collection represents a rediscovery for Kentucky of a Historical species. A small population consisting of less than ten individuals was located on Jones Road in the Copper Creek watershed. Photo vouchers and samples were taken, but the population may be in danger of extirpation due to roadside disturbance. Plant associates at this site included *Danthonia spicata*, *Liatris aspera*, *Seriocarpus asteroides*, *S. linifolius*, *Sorghastrum nutans*, and *Viola pedata*.

Bouteloua curtipendula (Michx.) Torr. (Poaceae). Special Concern.

Side-oats grama is a perennial grass that inhabits barrens, roadsides, and grassy slopes of the Interior Low Plateaus (Jones 2005). *Bouteloua curtipendula* was collected at two localities in the Drakes Creek watershed of the Dix River. A large population with

several hundred plants was found at the end of Hilltop Road in the utility easement right-of-way and on a road embankment at the end of Old Richmond Road. Associated species included *Asclepias viridiflora*, *Juniperus virginiana*, *Oligoneuron rigidum*, *Ratibida pinnata*, *Rosa carolina*, and *Schizachyrium scoparium*.

Carex crawei Dewey (Cyperaceae). Special Concern.

Craw's sedge is a perennial that inhabits calcareous glades of the Interior Low Plateaus (Jones 2005). Craw's sedge was collected from the Drakes Creek watershed of the Dix River. The plants were growing in eroded rivulets throughout the xeric limestone prairie complex at the end of Hilltop Road. The plant associates for *Carex crawei* included *Calamintha glabella*, *Scutellaria parvula*, *Silphium terebinthinaceum*, and *Schizachyrium scoparium*.

Castanea dentata (Marshall) Borkh. (Fagaceae). Endangered.

American chestnut is a deciduous tree that inhabits both dry and mesic acidic woodlands across Kentucky (Jones 2005). It is ecologically extirpated due to the decimation of populations by the Chestnut Blight Fungus (*Cryphonectria parasitica*) in the early part of the twentieth century (Wang et al. 2013). Work towards a hybrid strain of American chestnut that is blight-resistant is the subject of intensive research and experimental plantings have already taken place (Wang et al. 2013). This species still persists as stump sprouts through much of its native range and was collected at Maywoods by Godbey (1984).

Deschampsia caespitosa (L.) P. Beauv. (Poaceae). Endangered.

Tufted hair grass is a perennial grass that inhabits open woods of the Interior Low Plateaus (Jones 2005). The species was not observed during this study but a voucher by Julian Campbell is deposited at KY. The plants were collected from a population at the junction of White Oak Creek at the Kentucky River along limestone ledges and on cobble bars.

Elymus svensonii G.L.Church (Poaceae). Threatened. (Figure 16)

Svenson's wild rye is a perennial grass that inhabits xeric woodlands of the Interior Low Plateaus (Jones 2005). Photo vouchers were taken of *Elymus svensonii* at Tom Dorman State Nature Preserve and Sally Brown and Crutcher Preserve in the the Kentucky River Palisades. Plant associates at these sites included *Acer saccharum*, *Fraxinus quadrangulata*, *Juniperus virginiana*, *Quercus muhlenbergii*, and *Viburnum rafinesquianum* var. *affine*.

Hydrastis canadensis L. (Ranunculaceae). Unlisted.

Goldenseal is a perennial forb that inhabits mesic forests across the state (Jones 2005). It is not currently listed by the KSNPC (2012), but populations are likely declining due to overharvesting for medicinal use (McGraw et al. 2003). This species was found in two localities on north facing slopes. A population was found above the Kentucky River at Tom Dorman State Nature Preserve (see *Viburnum molle* for plant associates). Another population was found in the Drakes Creek watershed of the Dix River where the mesic forest associates were *Acer nigrum*, *A. saccharum*, *Aesculus*

glabra, *Aplectrum hymale*, *Asclepias purpureascens*, *Carya ovata*, *Fraxinus americana*, *F. quadrangulata*, *Lindera benzoin*, *Lonicera prolifera*, *Ptelea trifoliata*, *Quercus muhlenbergii*, *Q. shumardii*, *Sanicula odorata*, *Staphylea trifolia*, and *Viburnum rufidulum*.

Juglans cinerea L. (Juglandaceae). Threatened.

White walnut is a deciduous tree that inhabits bottomlands, ravines, and moist slopes across Kentucky (Jones 2005). Walnut canker (*Sirococcus clavignenti-juglandacearum*) is a serious pathogen of the species and has decimated populations across the eastern U.S. (Brosi 2010). A single tree was found at Maywoods growing along the tributary of Fall Lick Creek below the dam in a Calcareous Mesophytic Forest.

Lonicera prolifera (G.Kirchn.) Rehder. (Caprifoliaceae). Threatened. (Figure 17)

Grape honeysuckle, listed as *Lonicera reticulata* Raf. by the KSNPC (2012a), is a woody vine that inhabits mesic wooded slopes, often over ledges, in the Interior Low Plateaus (Jones 2005). Grape honeysuckle was collected from one locality in the Drakes Creek watershed of the Dix River. Plant associates in this locality included *Acer nigrum*, *A. saccharum*, *Aesculus glabra*, *Asclepias purpurascens*, *Carya ovata*, *Celtis occidentalis*, *Fraxinus americana*, *F. quadrangulata*, *Hydrastis canadensis*, *Quercus muhlenbergii*, *Q. shumardii*, *Sanicula odorata*, *Trillium sessile*, and *Viburnum rufidulum*.

Onosmodium hispidissimum Mackenzie (Boraginaceae). Endangered. (Figure 18)

Hispid false gromwell is a perennial forb that inhabits limestone glades and open woodlands of the Interior Low Plateaus (Jones 2005). Two populations were found near the same locality in Garrard County. Both populations occurred in the Drakes Creek watershed of the Dix River, in the mesic swales of a xeric limestone prairie along a utility easement right-of-way. Plant associates at this site included *Dichanthelium clandestinum*, *Festuca arundinacea*, *Heliopsis helianthoides*, *Monarda fistulosa*, and *Tridens flavus*.

Panax quinquefolius L. (Araliaceae). Unlisted.

Ginseng is a perennial forb that inhabits mesic forests across Kentucky (Jones 2005). Currently, *Panax quinquefolius* is not a state listed species, but populations are declining due to overharvesting for medicinal uses (Case et al. 2007; McGraw et al. 2004). *Panax quinquefolius* has been recorded from Maywoods (Godbey 1984). It has been reported from the Kentucky River Palisades in Garrard County, but populations were not observed in this study.

Phlox bifida Beck. subsp. *stellaria* (A. Gray) Wherry (Polemoniaceae). Endangered. (Figure 19)

Sand phlox is a perennial forb that inhabits cedar glades and limestone woods of the Interior Low Plateaus and Mississippi Embayment (Jones 2005). *Phlox bifida* subsp. *stellaria* was documented by photo voucher from Tom Dorman State Nature Preserves on limestone cliffs above White Oak Creek in the Palisades near the Kentucky River. Plant

associates of sand phlox included *Allium cernuum*, *Hedyotis nigricans*, *Juniperus virginiana*, *Opuntia humifosa*, *Panicum capillare*, *Rosa carolina*, and *Ulmus thomasii*.

Prenanthes crepidinea Michx. (Asteraceae). Special Concern. (Figure 20)

Nodding rattlesnake root is a perennial forb that inhabits mesic to wet open woods of the Interior Low Plateaus and the Appalachian Plateaus (Jones 2005). Nodding rattlesnake root was collected in the Scott's Fork watershed of Sugar Creek on Sad Road. Several hundred vegetative individuals and a few flowering plants were found along a watercourse associated with *Ambrosia trifida* and *Verbesina alternifolia* under a canopy of *Platanus occidentalis*.

Schizachne purpurascens (Torr.) Swallen (Poaceae). Threatened. (Figure 21)

The distribution and habitat of false melic in the state has been unclear (Jones 2005). This perennial species was found at Sally Brown and Crutcher Preserve on a steep slope below the cliffline. No collection was made due to low population numbers but a photo voucher was taken. Plant associates at this site were *Aquilegia canadensis*, *Draba ramosissima*, and *Heuchera villosa*.

Silphium pinnatifidum Elliott (Asteraceae). Special Concern.

Cut-leaf rosinweed is a perennial forb that inhabits glades and barrens of the Interior Low Plateau and Mississippi Embayment in Kentucky (Jones 2005). *Silphium pinnatifidum* was collected at Maywoods in a restored mesic prairie located on Silurian limestone. This population likely originated from plantings. Plant associates at the site

included *Echinacea pallida*, *Pycnanthemum tenuifolium*, *Quercus falcata*, *Q. imbricaria*, *Q. muhlenbergii*, *Q. stellata*, *Q. velutina*, *Solidago canadensis*, and *Sorghastrum nutans*.

Spiranthes magnicamporum Sheviak (Orchidaceae). Threatened. (Figure 22)

Prairie ladies tresses is a perennial forb that inhabits barrens of the Interior Low Plateaus (Jones 2005). This species was collected from the xeric limestone prairie at the end of Hilltop Road in the Drakes Creek watershed of the Dix River. Associates included *Andropogon gerardii*, *Blephilia ciliata*, *Bouteloua curtipendula*, *Juniperus virginiana*, *Ratibida pinnata*, *Schizachyrium scoparium*, and *Silphium terebinthinaceum*.

Viburnum molle Michx. (Caprifoliaceae). Special Concern.

Kentucky viburnum is a shrub that inhabits calcareous woods and ledges above streams in the northern Interior Low Plateaus of Kentucky (Jones 2005). A photo voucher was taken at Tom Dorman State Nature Preserve in the Kentucky River Palisades. A rich flora associated with at this site included *Acer nigrum*, *A. saccharum*, *Cardamine douglassii*, *Cystopteris protrusa*, *Dentaria heterophylla*, *Erigenia bulbosa*, *Erythronium albidum*, *Fraxinus americana*, *F. quadrangulata*, *Hydrastis canadensis*, *Jeffersonia diphyllum*, *Juniperus virginiana*, *Quercus rubra*, and *Q. shumardii*.

Viola septemloba Leconte subsp. *eggelstonii* (Brainerd) L.E. McKinney (Violaceae).

Special Concern. (Figure 23)

Eggelston's violet is a perennial forb occurring in limestone glades of the Interior Low Plateaus of Kentucky (Jones 2005). This species was collected by Julian Campbell

at Tom Dorman State Nature Preserve on the dry limestone cliffs above the Kentucky River and deposited at the University of Kentucky Herbarium. Associates reported at this site included *Carex eburnea*, *Danthonia spicata*, *Hedyotis nigricans*, *Lithospermum canescens*, *Monarda fistulosum*, *Rosa carolina*, and *Symphyotrichum oblongifolium*.

Vegetation of Central Kentucky

There is sparse information on presettlement vegetation of Garrard County. One of the earliest accounts is by Linney (1882), who noted *Fraxinus quadrangulata* and *Prunus serotina* often comprised about 50% of the Bluegrass forests. Associated species included *Acer* spp., *Carya laciniosa*, *Celtis occidentalis*, *Gymnocladus dioicus*, *Morus rubra*, *Tilia americana*, and *Ulmus americana*. He also mentioned *Magnolia acuminata* could be found growing on Trenton Limestones (presently High Bridge Formation) in Garrard County, and *Quercus montana* could be found on isolated knobs in the county. Braun (1950) as well as Wharton and Barbour (1991) provide more extensive accounts of presettlement vegetation of the region and noted many of the above-mentioned species. Numerous studies have been conducted on the vegetation of the Bluegrass and Knobs in post-settlement times. A review of recent studies that provide quantitative data on the vegetation of the Bluegrass and Knobs follows.

Bluegrass Region

Presettlement vegetation of the Bluegrass region has been altered by the anthropogenic disturbances (e.g., timber harvesting, agriculture, industry, and rural development). The original pre-settlement vegetation has been the subject of debate.

Originally, it was thought that “Ash-Oak Savanna” was present historically with open woodlands and widely spaced trees (Bryant 1983; Wharton and Barbour 1991; Jones 2005). Other studies, using historical settlement land surveys and contemporary dendrochronology, have concluded the vegetation was more of a closed canopy forest until the late 18th century when agricultural conversion cleared all but a few trees (Campbell 1985; McEwan et al. 2008).

At a Grant County site near the boundary of the Outer Bluegrass and Eden Shale, Braun (1950) reported *Quercus alba* and *Q. velutina* formed 30% of the canopy, followed by *Fagus grandifolia*, *Acer saccharum*, *Juglans nigra*, *Fraxinus americana*, and *Tilia americana*. At a site on the Eden Shale in Campbell County, oak species formed about 70% of the canopy (*Quercus alba*, *Q. shumardii*, and *Q. muhlenbergii*), with *Carya ovata*, *Fraxinus americana*, *Juglans nigra*, and *Acer saccharum* as minor associates.

Several vegetation and floristic studies have focused on Kentucky River Palisades sites of the Inner Bluegrass. Bryant (1973), Campbell and Meijer (1989), Campbell et al. (1995), and Husband (2000) reported similar results of quantitative studies of Panther Rock, Jessamine Gorge, Raven Run, and Floracliff Nature Sanctuary, respectively. Recently disturbed areas were dominated by *Juniperus virginiana*; while mature mesic forests contained *Acer saccharum*, *Quercus rubra*, *Fraxinus americana*, *Tilia americana*, and *Aesculus* spp. Mature xeric forests were comprised of *Quercus muhlenbergii*, *Fraxinus quadrangulata*, *Juniperus virginiana*, and *Carya* spp. Martin et al. (1979) conducted a more wide-ranging study of the vegetation in the Kentucky River Palisades. They reported bluffs and slopes above the river floodplain contained *Quercus muhlenbergii* (south slopes) and *Acer saccharum* (north and east slopes); upper slopes

and dry sites contained *Juniperus virginiana* or *Quercus muhlenbergii* and *Fraxinus quadrangulata*; lower slopes contained *Liriodendron tulipifera*, *Tilia americana*, *Fraxinus americana*, *Ulmus americana*, and *Aesculus* spp.; and floodplains contained *Acer saccharinum* and *Platanus occidentalis*.

Bryant et al. (1980) sampled 15 old-growth stands in the Inner Bluegrass. They calculated Importance Values in four stands. They reported *Fraxinus quadrangulata*, *Quercus macrocarpa*, and *Q. muhlenbergii* as the predominant species, followed by *Quercus shumardii*, *Carya laciniosa*, and *Juglans nigra*. The same three species were the highest in percent composition when all 15 stands were combined, but about half of all trees sampled were *Fraxinus quadrangulata*.

Bryant (1981) sampled 12 forest stands in the Eden Shale Belt and contrasted old-growth stands with selectively logged stands. In the old-growth stands, the dominant species in order were *Quercus alba*, *Acer saccharum*, *Quercus rubra*, *Carya ovata*, *Fraxinus americana*, and *Carya glabra*. In the logged stands the dominants were *Acer saccharum*, *Carya ovata*, *Fraxinus americana*, *Carya glabra*, *C. cordiformis*, and *Quercus rubra*. Bryant (1981) noted *Fagus grandifolia* and *Sassafras albidum* were nearly always present but never abundant in all the stands sampled.

Bryant (1983) sampled seven forest stands in the Outer Bluegrass of Mason and Shelby County; and, he found very similar results to the earlier study of the Inner Bluegrass (Bryant et al. 1980). These stands sampled did differ from those of the Inner Bluegrass with an increased presence of *Quercus macrocarpa*, *Q. muhlenbergii*, and *Q. shumardii*, but *Fraxinus quadrangulata* was still the most important species.

Wharton and Barbour (1991) provided sampling data in four sites within Garrard County. Documented were, one a mesic cliff community of Maple-Ash-Oak, and three xeric communities of Oak-Ash, Oak-Maple-Ash, and Oak-Cedar-Ash. For the mesic cliff community, the canopy composition was 42% *Acer saccharum*, *A. nigrum*, and *A. negundo*, 16% *Fraxinus americana* and *F. quadrangulata*, and 26% *Quercus muhlenbergii*, *Q. shumardii*, and *Q. rubra*, with *Tilia americana*, *Juglans nigra*, *Carya* spp., *Celtis occidentalis*, and *Cladrastis kentukea* also present. The three xeric sites were very similar, with a canopy composition of 40–47 % with the above *Quercus* spp. but with *Q. alba* included. The two ash species formed 11–42 % of the canopy, and *Acer saccharum*, *A. nigrum*, and *Juniperus virginiana* comprising up to about a third of the canopy.

Knobs Region

Wharton (1945) sampled several mesic upland sites in the Knobs and reported the following canopy species frequencies (highest to lowest percentages). In Lewis County the canopy species were *Quercus alba*, *Tilia americana* var. *heterophylla*, *Liriodendron tulipifera*, *Fagus grandifolia*, *Quercus rubra*, *Carya laciniosa*. In Powell County the canopy consisted of *Quercus alba*, *Q. coccinea*, *Q. velutina*, and *Acer rubrum*. In Clark County canopy species included *Liriodendron tulipifera*, *Acer rubrum*, *Quercus alba*, *Q. velutina*, *Q. rubra*, and *Tilia americana* var. *heterophylla*. In Boyle County there was *Fagus grandifolia*, *Carya laciniosa*, *Acer rubrum*, *Acer saccharum*, *Aesculus flava*. In Casey County the canopy trees were *Fagus grandifolia*, *Acer saccharum*, *Quercus alba*, *Acer rubrum*, *Nyssa sylvatica*. *Tsuga canadensis* does not appear in the quantitative data;

but, Wharton (1945) noted the species was sometimes found in the mesic Knobs associations.

Braun (1950) also provided quantitative data on both dry and mesic Knobs vegetation. At the Taylor County site, the forests of dry slopes and rolling uplands were largely comprised of *Fagus grandifolia*, *Castanea dentata*, and *Liriodendron tulipifera* (about 78% of the canopy). *Quercus* spp. and *Carya* spp. were also important members of the community, as were *Acer saccharum* and *Nyssa sylvatica*. In Taylor County at more mesic sites, the forests consisted primarily of *Fagus grandifolia*, *Castanea dentata*, *Liriodendron tulipifera*, *Acer saccharum*, and *Aesculus flava*.

Braun (1950) noted that the increasing prominence of *Fagus grandifolia* in the mesic forests of the Knobs was an important difference from the Appalachian forests to the east. She also noted the largest trees in the Knobs sites were *Castanea dentata*, some about 1.5 m (5 ft) dbh. Braun must have sampled these sites just as the chestnuts were dying off from the chestnut blight. It is also notable that *Acer rubrum*, now a very significant member of the Knobs forests, was of minor importance in these early studies, and was not even present at the more mesic Taylor County sites (Braun 1950). In Jefferson County, Braun (1950) provided data for Cedar Creek Woods, a Knobs-Bluegrass transition area. She reported *Liriodendron tulipifera*, *Quercus alba*, and *Q. velutina* were the overwhelming dominants, along with other *Quercus* and *Carya*. *Acer saccharum*, *Fagus grandifolia*, and *Juglans nigra* were also in the canopy. Braun (1950) also noted that *Pinus virginiana* occurred more extensively in secondary forests throughout the Knobs, especially on dry and barren Devonian shale slopes.

Jones and Thompson (1986) sampled a beech-hemlock stand in the Knobstone Escarpment of Madison County and found that *Fagus grandifolia* and *Tsuga canadensis* comprised 66% of the total basal area with major associates being *Quercus alba*, *Liriodendron tulipifera*, and *Acer rubrum*.

Muller and McComb (1986) delineated four kinds of forests in the Knobs: Mesophytic Hardwoods, White Oak, Chestnut Oak, and Scarlet Oak. Eight sites were sampled, including one from Garrard County. The data for the eight sites were combined, and the species listed both by density and by basal area. For the Mesophytic Hardwoods, the dominant species based on basal area were *Fagus grandifolia*, *Liriodendron tulipifera*, *Acer saccharum*, *Quercus alba*, *Q. rubra*, *Sassafras albidum*, and *Fraxinus americana*. *Quercus alba* was dominant in basal area for the White Oak Forests; but, in density the following species ranked highest: *Acer saccharum*, *A. rubrum*, *Fagus grandifolia*, *Carya glabra*, *Quercus montana*, and *Oxydendrum arboreum*. *Quercus montana* and *Q. coccinea* predominated in their respective forest types, with the following species also important in both forests: *Fagus grandifolia*, *Acer saccharum*, *A. rubrum*, *Quercus alba*, and *Sassafras albidum*. *Tsuga canadensis* was recorded only in the White Oak Forest, while *Pinus virginiana* was found in all four forest types, but was of much less significance in the Mesophytic Hardwoods. *Pinus echinata* was absent from the Mesophytic Hardwoods and of minor importance in the other three oak-dominated forests.

Wharton (1945) provided information on flatwoods vegetation in the Knobs of Montgomery County. She noted the dominant canopy species for the wettest site were *Liquidambar styraciflua*, *Quercus palustris*, *Nyssa sylvatica*, and *Q. alba*, with *Q.*

bicolor, *Acer rubrum*, and *Liriodendron tulipifera* also present. Meijer et al. (1981) sampled various swampy sites in the Knobs and Outer Bluegrass and concluded that *Quercus bicolor* was a good indicator of this community type although the species was rarely a dominant.

Jones (2005) also described the typical swamp and floodplain communities of the Knobs. The swamp communities of the Knobs are usually characterized by a *Quercus bicolor*/*Q. palustris* community. Other associates included *Acer rubrum*, *Fraxinus pensylvanica*, *Liquidambar styraciflua* and *Nyssa sylvatica*. Streambanks are usually occupied by *Acer negundo*, *A. saccharinum*, *Betula nigra*, *Fraxinus pensylvanica*, *Platanus occidentalis*, *Populus deltoides*, and *Salix nigra*. Sometimes, additional species typical of upland habitats, such as *Aesculus glabra*, *Acer saccharum*, *Carya cordiformis*, and *Juglans nigra*, are present in this plant community.

Vegetation of Garrard County

Additional studies in quantitative ecology are needed to further characterize forest communities in the county. From preliminary observations, it appears that good examples of the communities described above may still be found in Garrard County.

The Inner Bluegrass forests of Garrard County differ from the forest communities of interior counties in central Kentucky (e.g., Fayette, Jessamine, Woodford, Scott, Harrison, and Bourbon), because *Quercus macrocarpa* is noticeably absent. Remaining Inner Bluegrass forests in the county tend to be influenced by the Kentucky River Palisades sub-region, characterized by shallow limestone soils of the Fairmount-Faywood-Rock outcrop complex, and contains *Acer saccharum*, *Carya ovata*, *Fraxinus*

quadrangulata, and *Quercus muhlenbergii*. These soils tend to support *Aesculus flava*, *Fagus grandifolia*, *Quercus alba*, and *Liriodendron tulipifera*, which are more typical of the Calcareous Mesophytic Forest in the Hills of the Bluegrass and Outer Bluegrass ecoregions. Furthermore, these four canopy trees are the best indicator species in the mesic forests of the Knobs.

Mesic forests with *Fagus grandifolia* and *Tsuga canadensis* were observed in the Knobs, including at least two areas at Maywoods. Other mixed mesophytic species such as *Magnolia acuminata*, reported by Linney (1882), were not observed. High quality examples of upland forest in the Knobs as described by Braun (1950) and Wharton (1945) are still extant in the county, but are at risk of degradation by logging. As noted by Braun (1950) and others, *Fagus grandifolia* is a typical component of mesic Knobs forests, as is *Acer rubrum*, which was less abundant in these previous studies.

A few flatwoods sites with swamp forests were encountered, but this forest type seems to be disappearing from the landscape. An area of flatwoods along Good Hope Road, Old Richmond Road, and Brock Road contains a roadside remnant with large trees in a fenceline has *Diospyros americana* as well as *Quercus alba*, *Q. bicolor*, *Q. palustris*, and *Q. stellata*.

Vegetation of Study Sites

Tom Dorman State Nature Preserve

The vegetation at Tom Dorman State Nature Preserve consists of Calcareous Mesophytic Forest, Calcareous Sub-xeric Forest, Riparian Forest, and Limestone/Dolomite Prairie.

The Calcareous Sub-xeric Forest inhabits flat uplands and clifflines with mostly infertile soils between the Kentucky River and State Highway 1845 and is composed of *Acer saccharum*, *Carya ovata*, *Fraxinus quadrangulata*, *Juniperus virginiana*, *Quercus alba*, *Q. muhlenbergii*, *Q. velutina*, and *Ulmus rubra*. In open canopy habitats of the Calcareous Sub-xeric Forest two distinctive oaks occur: *Quercus imbricaria* and *Q. stellata* with an understory of *Ceanothus americanus*, *Cornus florida*, *Prunus americana*, *Sassafras albidum*, and *Viburnum rufidulum*. In the forest understory on a narrow ridge above the mouth of White Oak Creek, a large colony of the rare *Elymus svensonii* and the uncommon shrub *Viburnum rafinesquianum* var. *affine* grow with *Aquilegia canadensis*, *Carex eburnea*, *Diarrhena americana*, *Elymus hystrix*, *Eurybia divaricata*, *Pedicularis canadensis*, and *Solidago ulmifolia*, which form a conspicuous but sparse graminoid and herbaceous ground cover in the thin limestone soils. Some of the *Quercus muhlenbergii* in this forest pre-date the period of large-scale settlement in Garrard County. Tree-ring dating determined that some of these trees are greater than 200 years old (Neil Pederson, Columbia University, pers. com., 2010).

Limestone/Dolomite Prairie is restricted to the cliff margins above the Kentucky River along the utility easement. There, shrubs such as *Rosa carolina* and *Rhus aromatica* with a rich herbaceous layer of *Danthonia spicata*, *Fleischmannia incarnata*, *Hedyotis nigricans*, *Lithospermum canescens*, *Monarda fistulosa*, *Opuntia humifusa*, *Ruellia* spp., *Silphium trifoliatum*, *Symphyotrichum oblongifolium*, and *Viola septemloba* subsp. *egglestonii* form a very unique prairie community.

The Calcareous Mesophytic Forest inhabits lower slopes above the Kentucky River. This community is composed of *Acer nigrum*, *A. saccharum*, *Carya cordiformis*,

C. laciniosa, *Cladratis kentuckea*, *Fraxinus americana*, *Liriodendron tulipifera*, *Quercus muhlenbergii*, *Q. rubra*, *Q. shumardii*, *Tilia americana*, and *Ulmus americana*. Spring ephemerals are a characteristic feature of the slope forests along the Kentucky River and the stream valley of White Oak Creek where sheltered and humid conditions promote the formation of this rich forest type.

The Riparian Forest along the terraces of the Kentucky River is a type of seasonally flooded ephemeral wetland. Trees in this community include *Acer negundo*, *A. saccharinum*, *Fraxinus pennsylvanica*, *Liriodendron tulipifera*, *Platanus occidentalis*, and *Populus deltoides*. Shrubs, *Lindera benzoin* and *Hydrangea arborescens*, inhabit the understory with the herbaceous layer of *Cinna arundinacea*, *Chasmanthium latifolium*, *Cryptotaenia canadensis*, *Elymus riparius*, *E. virginicus*, *Laportea canadensis*, *Lobelia siphilitica*, *Phlox paniculata*, *Rudbeckia lancinata*, *Silphium perfoliatum*, and *Stachys tenuifolia*.

The Nature Conservancy's Sally Brown and Crutcher Preserve

Plant communities at the Sally Brown and Crutcher Preserve include Calcareous sub-xeric Forest, Calcareous Mesophytic Forest and Riparian Forest.

The Calcareous Sub-xeric Forest occurs on clifflines and steep rock faces above the Kentucky River and is composed of *Acer saccharum*, *Carya ovata*, *Cladratis kentuckea*, *Fraxinus quadrangulata*, *Juniperus virginiana*, and *Quercus muhlenbergii*. A small population of the state-listed *Elymus svensonii* and *Schizachne purpurescens* are found along clifflines near the eastern preserve boundary. At mesic upland sites, such as upper limestone slopes above the rim of the Kentucky River Palisades, the characteristic

trees are *Acer nigrum*, *A. saccharum*, *Carya ovata*, *C. laciniosa*, *Celtis occidentalis*, *Fraxinus americana*, *F. quadrangulata*, *Juglans nigra*, *Quercus muhlenbergii*, *Q. shumardii*, *Prunus serotina*, *Ulmus americana*, and *U. rubra*. Characteristic herbs in this community are *Agastache nepetoides*, *Blephilia hirsuta*, *Cardamine douglasii*, *Chaerophyllum procumbens*, *Claytonia virginica*, *Corydalis flavula*, *Dentaria heterophylla*, *Elymus macgregorii*, *E. villosus*, *Erythronium albidum*, *Osmorhiza longistylis*, *Packera obovata*, *Phacelia bipinnatifida*, *Phlox divaricata*, *Podophyllum peltatum*, *Polymnia canadensis*, *Trillium sessile*, *Tradescantia subaspera*, *Verbesina virginica*, and *Viola sororia*. A lush groundcover of the fern *Cystopteris protusa* characterizes this plant community.

The Calcareous Mesophytic Forest inhabits the lower slopes just above the Kentucky River floodplain and also at higher elevations along valley slopes of Millstone Creek on the Crutcher Trail. A species rich forest canopy is indicative of this community with these trees present: *Acer nigrum*, *A. saccharum*, *A. rubrum*, *Aesculus flava*, *Carya cordiformis*, *C. laciniosa*, *C. ovata*, *Cladratis kentuckea*, *Fagus grandifolia*, *Fraxinus americana*, *F. quadrangulata*, *Liriodendron tulipifera*, *Quercus alba*, *Q. muhlenbergii*, *Q. rubra*, *Q. shumardii*, *Tilia americana*, and *Ulmus americana*. Common woody understory species are *Asimina triloba*, *Lindera benzoin*, and *Staphylea trifolia*. Characteristic herbs include *Asarum canadense*, *Collinsonia canadensis*, *Hydrophyllum appendiculatum*, *Stylophorum diphyllum*, and *Viola canadense*.

Although some areas with relatively large trees were noted, no old-growth stands were observed. But, one exceptionally large *Quercus shumardii* on the Crutcher Trail along Millstone Creek measured 115 cm dbh.

The Riparian Forest occurs on stream terraces of the Kentucky River. The tree canopy is typical of the Kentucky River Palisades floodplain with *Acer negundo*, *A. saccharinum*, *Fraxinus pennsylvanica*, *Platanus occidentalis* and an understory of *Arundinaria gigantea*. Pre-settlement canebrakes of *Arundinaria gigantea* were a prominent feature, regionally (Campbell 1980, 1985). Interesting spring wildflowers are found along the Sally Brown Trail in the floodplain, such as *Delphinium tricorne*, *Phlox divaricata*, *Trillium flexipes*, and *Trillium sessile*, including many annuals. These characteristic annuals include *Chaerophyllum procumbens*, *Collinsia verna*, *Corydalis flavula*, *Phacelia pinnatifida*, *P. purshii*, and *Polymnia canadensis*.

The Felix Reynolds Prairie

The Felix Reynolds Prairie is a high quality remnant of the Limestone/Dolomite Prairie ecosystem found on Upper Ordovician limestone foothills near the Knobs but within the transition area of the Outer Bluegrass. A mosaic of plant communities are found here such as Limestone/Dolomite Prairie, Calcareous Sub-xeric Forest, and Riparian Forest.

Limestone/Dolomite Prairie, also known as Xeric Limestone Prairie, is found on south and west aspects of eroding limestone slopes. It is a grassland community dominated by the warm season grasses *Andropogon gerardii*, *Bouteloua curtipendula*, *Danthonia spicata*, *Panicum anceps*, *Schizachyrium scoparium*, and *Tridens flavus*. Conspicuous showy wildflowers inhabit the prairie and include *Asclepias tuberosa*, *Asclepias viridiflora*, *Blephilia ciliata*, *Erigeron pulchellus*, *Guara filipes*, *Heliopsis helianthoides*, *Lithospermum canescens*, *Pycnanthemum tenuifolium*, *Rudbeckia fulgida*,

Ratibida pinnata, *Silphium terebinthinaceum*, and *S. trifoliatum*. Several rare plants occur here including *Onosmodium hispidissimum*, *Ophioglossum engelmannii*, and *Spiranthes magnicamporum*. An endemic moth (*Schinia* sp.) that has only one plant host, *Orbexilum onobrychis*, was found at this site by a regional entomologist, Loran Gibson, during this study.

At the Reynolds Prairie, a Sub-xeric Calcareous Forest composed of *Acer saccharum*, *Carya laciniosa*, *C. ovata*, *Fraxinus quadrangulata*, *Juniperus virginiana*, *Quercus imbricaria*, *Q. muhlenbergii*, *Q. stellata*, *Q. velutina*, and *Ulmus rubra* inhabits the north slopes.

A narrow corridor of Riparian Forest occurs along an unnamed tributary of Drakes Creek. The forest is composed of *Acer negundo*, *Aesculus glabra*, *Fraxinus pennsylvanica*, *Juglans nigra*, and *Platanus occidentalis*. Understory shrubs are *Asimina triloba*, *Lindera benzoin*, and *Ptelea trifoliata*. Characteristic grasses and wildflowers are *Elymus virginicus*, *E. villosus*, *Helenium autumnale*, *Hydrophyllum macrophyllum*, *Lobelia siphilitica*, *Lycopus virginicus*, *Phlox divaricata*, *Solidago flexicaulis*, *Symphotrichum prenanthoides*, and *Thaspium trifoliatum*.

Maywoods Environmental and Educational Laboratory

Maywoods includes Limestone/Dolomite Prairie, Shale Barrens (open woodland), Appalachian Sub-xeric Forest, Calcareous Mesophytic Forest, and Hemlock-mixed forest.

The Limestone/Dolomite Prairie consists of a restoration area bordering Fall Lick Creek on the southwest boundary. This grassland is about 3 ha (7.8 acres) in size. The

major grass species are *Andropogon gerardii* and *Sorghastrum nutans*. Interesting herbs include *Baptisia australis*, *Echinacea pallida*, *Polygala sanguinea*, *Scleria triglomerata*, and *Silphium pinnatifidum*.

Shale Barrens (open woodland) inhabit the ridgetops of shale and limestone outcrops. Trees such as *Pinus virginiana*, *Populus grandidentata*, *Quercus alba*, *Q. coccinea*, *Q. montana*, *Q. stellata*, and *Q. velutina* form stunted groves and a sparse canopy including small trees such as *Cercis canadensis*, *Cornus florida*, *Ostrya virginiana*, *Rhus copallinum*, and *Ulmus alata*. Characteristic herbs are *Angelica venosa*, *Antennaria parlinii*, *Chrysopsis mariana*, *Cirsium carolinianum*, *Coreopsis auriculata*, *C. major*, *Danthonia spicata*, *Erigeron strigosus*, *Eurybia surculosa*, *Hieracium gronovii*, *Houstonia caerulea*, *Hypericum gentianoides*, *H. stragulum*, *Hypoxis hirsuta*, *Lespedeza hirta*, *L. repens*, *Lobelia puberula*, *Orbexilum pedunculatum*, *Penstemon brevisepalus*, *Prenanthes serpentaria*, *Pseudognaphalium obtusifolium*, *Seriocarpus asteroides*, *Silene virginica*, *Solidago bicolor*, *Symphyotrichum patens*, *S. undulatum*, *Tradescantia virginiana*, and *Viola pedata*.

Appalachian sub-xeric Forest inhabits south and west aspects and is composed of *Pinus echinata*, *P. virginiana*, *Quercus alba*, *Q. coccinea*, *Q. montana*, *Q. stellata*, and *Q. velutina*. A few of the characteristic herbs include *Aureolaria laevigata*, *Doellingeria infirma*, *Heuchera americana*, *Hieracium venosum*, *Iris verna*, *Krigia biflora*, *Lysimachia quadrifolia*, *Oxalis violacea*, *Porteranthus stipulata*, *Scutellaria elliptica*, *Silene virginica*, *Solidago hispida*, *S. sphacelata*, *Taenidia integerrima*, and *Tradescantia virginiana*.

Appalachian Mesic Forest inhabits valley bottoms, mid-elevation slopes, and north aspects. Forest canopy species are *Acer saccharum*, *A. rubrum*, *Aesculus flava*, *Carya glabra*, *C. ovata*, *C. tomentosa*, *Juglans cinerea*, *Nyssa sylvatica*, *Pinus echinata*, *P. virginiana*, *Quercus alba*, *Q. coccinea*, *Q. montana*, *Q. rubra*, *Q. velutina*. Small trees and shrubs in this habitat include *Asimina triloba*, *Carpinus caroliniana*, *Cornus florida* and *Lindera benzoin*. Characteristic herbs are *Actaea pachypoda*, *Amphicarpaea bracteata*, *Circaea lutetiana*, *Eurybia macrophylla*, *Helianthus microcephalus*, *Hepatica acutiloba*, *Krigia biflora*, *Packera aurea*, *Phlox glaberrima*, *Uvularia perfoliata*, and *Viola palmata*.

Hemlock-mixed Forest occupies the lower slopes and sheltered north and east aspects. Trees such as *Acer rubrum*, *Carya ovata*, *C. glabra*, *C. tomentosa*, *Pinus echinata*, *P. virginiana*, *Q. alba*, *Q. coccinea*, *Q. montana*, *Q. rubra*, *Q. velutina*, and *Tsuga canadensis* occur in this forest. Shrubs include *Kalmia latifolia* and *Viburnum acerifolium*. The herbaceous layer is sparse with *Amphicarpaea bracteata*, *Chimaphila maculata*, *Dioscorea villosa*, *Epigaea repens*, *Eupatorium fistulosum*, *Gaultheria procumbens*, *Goodyera pubescens*, and *Mitchella repens*. Two uncommon trees, *Crataegus calpodendron* and *Juglans cinerea*, were found in a rich forest assemblage on a tributary of Fall Lick Creek below the lake

CHAPTER VI

SUMMARY AND CONCLUSION

Garrard County covers 60,592 hectares in central Kentucky, and is located within the Bluegrass and Knobs regions of the Interior Low Plateaus. Garrard County is positioned in a physiographic transition zone which provides the variables of slope aspect, soils, geology, moisture, and disturbance that promotes high plant species richness and a wide range of plant communities. Ecoregions within Garrard County are Inner Bluegrass, Hills of the Bluegrass, Outer Bluegrass, and Knobs Norman-Upland. Further ecological subdivisions recognized in the study include Kentucky River Palisades in the Inner Bluegrass, as well as Flatwoods and Dolomitic Foothills in the Outer Bluegrass. This study documented 961 species, in 494 genera, from 137 families. Of the 961 species, 168 were non-native, with 95 of these taxa recognized on the state's exotic pest plant list. Sixteen of the species identified in Kentucky as Historical, Endangered, Threatened, or Special Concern. Twelve plant communities as well as ruderal habitats were described.

Further work on the flora will no doubt reveal additional species in Garrard County. In particular, clifflines and floodplains near the Kentucky and Dix rivers, seasonal wetlands, native grasslands, and the steep forests of the Knobs need additional studies. The hemlock-mixed mesophytic forest and the shale barrens (open woodlands) at Maywoods Environmental and Educational Laboratory also have the potential for yielding additional floristic discoveries, as well as riparian forests in deep valleys and flatwoods communities on broader terraces. Additional searches should be conducted to

locate previously documented species in Maywoods that were not observed during this study, such as *Cypripedium pubescens*, *Malaxis unifolia*, and *Panax quinquefolius*.

Novel ecosystems (ecosystems dominated by exotic species) are increasing in land area as ruderal habitat takes the place of the original vegetation. One of these novel ecosystems, the Eurasian pasture/hayfield, is now the predominant agricultural land cover in Garrard County. Species associated with novel ecosystems include *Ailanthus altissima*, *Alliaria petiolata*, *Euonymus fortunei*, *Festuca arundinacea*, *Lespedeza cuneata*, *Ligustrum obtusifolium*, *Lonicera japonica*, *L. maackii*, *Microstegium vimineum*, *Pueraria montana* var. *lobata*, *Rosa multiflora*, and *Sorghum halepense*. These invasives have become plant community dominants near areas of settlement and in the vicinity of highways and smaller roads throughout the county.

Baseline floristic surveys at the county level can reveal plant community types and species richness for use in conservation planning and management. In Garrard County, for example, *Elymus svensonii* and *Phlox bifida* subsp. *stellaria* occur only on the limestone outcrops above the Kentucky River; this Calcareous Sub-xeric Forest is threatened by exotic species, i.e., *Ailanthus altissima*, *Lonicera japonica*, *L. maackii*, *L. standishii*, *L. fragrantissima*, *Rhamnus davurica*, and *Prunus mahaleb*. Removal of the invasive plants that threaten rare plant populations should be a management goal at the Tom Dorman State Nature Preserve and the Sally Brown and Crutcher Preserve.

On the horizon, hemlock woolly adelgid (*Adelges tsugae*), emerald ash borer (*Agrilus planipennis*), Asian longhorn beetle (*Anoplophora glabripennis*), gypsy moth (*Lymantria dispar*), and many others are threats to the natural plant communities of Garrard County. Problems such as meta-community extirpation, edge effect, and island

dynamics create shifts in the biogeographic range of native plants and subsequently change the population structure and species richness over time. The plant communities listed by Kentucky State Nature Preserve Commission contain rare species and are at risk of losing ecosystem function and species richness due to land fragmentation, woody plant encroachment, and invasive species competition. Floristic surveys, such as this one in Garrard County, Kentucky, become invaluable sources of baseline information for future land use planning and conservation efforts.

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APPENDIX I:

Annotated List of the Vascular Flora of Garrard County

All classifications in this annotated list of species for Garrard County follow Jones (2005). The divisional groupings are: Equisetophyta, Lycopodiophyta, Polypodiophyta, Coniferophyta, and Magnoliophyta. The Magnoliophyta is further divided into classes: Dicotyledoneae and Monocotyledoneae. Within each of the major groupings the species are listed by family and genus in alphabetical order. An exclamation point (!) indicates a state-listed species of Special Concern, Threatened, or Endangered status (KSNPC 2012a). An asterisk (*) indicates a species of exotic origin and a double asterisk (***) indicates a species listed by the Kentucky Exotic Pest Plant Council (KY EPPC, 2013). Each species entry also includes collector name, collection number, herbarium acronym, physiographic region, abundance, moisture regime, habitat and locality and other notes. If additional specimens were examined and documented then the collector, collection number, herbarium acronym, and locality are listed. An abundance value (Abundant, Frequent, Common, Uncommon, Rare) is subjectively assigned to each species according to individual density and population frequency within the county. The habitat requirements for each species is described by moisture regime (Aquatic, Hydric, Mesic, or Xeric) and plant community (Woodland, Grassland, and Ruderal).

EQUISETOPHYTA

Equisetaceae

Equisetum hyemale L., R.L. Thompson 97-276 (BEREA), Palisades, Uncommon, Hydric, Ruderal. Collected at the Camp Nelson Quarry near White Oak Creek off Rogers Road.

LYCOPODIOPHYTA

Lycopodiaceae

Lycopodium digitatum Dill., W.W. Overbeck 461, 579, 924 (EKY), Dolomitic Foothills and Knobs, Common, Mesic, Woodland. Collected in the Knobs at Maywoods in Oak-Hickory Forest and in the Dolomitic Foothills at Reynolds Prairie under *Juniperus virginiana*.

Lycopodium obscurum L., W.W. Overbeck 962, 1366 (EKY), Knobs, Uncommon, Mesic to Hydric, Woodland. Collected at Maywoods.

POLYPODIOPHYTA

Aspleniaceae

Asplenium platyneuron (L.) BSP, W.W. Overbeck 756 (EKY), Palisades, Common, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve in Mesic Forest and Forest Openings on bedrock outcrops.

Asplenium rhizophyllum L., W.W. Overbeck 213 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods on dolomitic outcrops along Fall Lick Creek and observed in Calcareous Mesophytic Forest at Tom Dorman State Nature Preserve in the Palisades.

Asplenium ruta-muraria L., W.W. Overbeck 759 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected on limestone outcrops above the Kentucky River at Tom Dorman State Nature Preserve.

Blechnaceae

Woodwardia areolata (L.) T. Moore, W.W. Overbeck 607, 1364 (EKY), Knobs, Rare, Hydric, Woodland. Collected on the southeastern wooded lake shore at Maywoods where it grows with *Sphagnum*.

Dennstaedtiaceae

Dennstaedtia punctilobula (Michx.) T. Moore, Donna A. Godbey 177 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Pteridium aquilinum (L.) Kuhn., Donna A. Godbey 464 (EKY), Knobs, Rare, Mesic, Woodland. Collected at Maywoods. Found on ridges or south slopes in Oak-Hickory Forest and associated with pines.

Dryopteridaceae

Athyrium filix-femina (L.) Roth, W.W. Overbeck 611 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected above Fall Lick Creek on Hamilton Valley Rd between Harmon's Lick Rd and Narrow Gap Rd associated with black shale outcrops.

Cystopteris bulbifera (L.) Berhardi, R.C. Clark 24409 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected on limestone cliffs above the Dix River upstream from Highway 52. Also collected by Mary Wharton (9493 EKY) at White Oak Creek.

Cystopteris protrusa (Weath.) Blasdell, W.W. Overbeck 208, 760 (EKY), Palisades, Common, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve and Sally Brown Preserve in Calcareous Mesophytic Woodland.

Cystopteris tennesseensis Shaver, W.W. Overbeck 757, 847 (EKY), Palisades, Common, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve and Sally Brown Preserve in Calcareous Mesophytic Woodland.

Diplazium pycnocarpon (Spreng.) M. Broun, W.W. Overbeck 833 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve on the species rich toe slope above the Kentucky River Floodplain growing with the unusual associates *Tilia*

americana and *Gymnocladus dioicus*. Also collected by Mary E. Wharton 9583 (KY) along White Oak Creek.

Dryopteris marginalis (L.) A. Gray, W.W. Overbeck 341, 673, 774, 758 (EKY), Knobs and Palisades, Uncommon, Mesic, Woodland. Collected on North facing slopes at Maywoods and Tom Dorman State Nature Preserve.

Onoclea sensibilis (L.), R.L. Thompson 12-594 (BEREA), Knobs, Uncommon, Hydric, Woodland. Collected at Maywoods on the southeastern lake margin.

Polystichum acrostichoides (Michx.) Schott., Mary E. Wharton 10127 (KY), Palisades, Mesic, Uncommon, Woodland. Calloway Creek.

Woodsia obtusa (Spreng.) Torr., R.C. Clark 24405 (EKY), Palisades, Uncommon, Mesic, Woodland. Dix River.

Lygodiaceae

Lygodium palmatum (Bernh.) Sw., W.W. Overbeck 1293 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at a clear-cut Mesic Forest on Calico Road growing with *Cornus florida* and *Liriodendron tulipifera*.

Ophioglossaceae

Botrychium biternatum (Savigny) Underw., W.W. Overbeck 1124 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods downstream from lake.

Botrychium dissectum Spreng., W.W. Overbeck 1507 (EKY), Dolomitic Foothills, Uncommon, Mesic, Woodland. Collected at Reynolds Prairie in Mesic Forest on North facing slope.

Botrychium virginianum (L.) Sw., W.W. Overbeck 1284 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods below dam along South bank of stream.

Ophioglossum engelmannii Prantl, W.W. Overbeck 1143 (EKY), Dolomitic Foothills, Rare, Xeric, Prairie. Collected at Reynolds Prairie on crest of hill dividing North slope Mesic Forest and South slope Xeric Limestone Prairie growing under mature *Juniperus virginiana* and juvenile *Quercus macrocarpa* as well as *Ranunculus fascicularis*, *Danthonia spicata*, and *Antennaria plantaginifolia*.

Ophioglossum vulgatum L., W.W. Overbeck 1277 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods below dam along South bank of stream.

Osmundaceae

Osmunda claytoniana L., Donna A. Godbey 115 (EKY), Knobs, Rare, Mesic, Woodland. Maywoods.

Polypodiaceae

Pleopeltis polypodioides (L.) E.G. Andrews & Windham, W.W. Overbeck 1381 (EKY), Palisades, Rare, Mesic, Woodland. Collected at Sally Brown Preserve in Calcareous Mesophytic Forest on bluff overlooking Kentucky River at the end of Millstone Creek Trail. Growing with *Liparis liliifolia*, *Viburnum rafinesquianum* var. *affine*, and *Elymus svensonii*.

Polypodium virginianum L., W.W. Overbeck 671 (EKY), Knobs, Rare, Mesic, Woodland. Collected at Maywoods on North facing slope.

Pteridaceae

Adiantum pedatum L., W.W. Overbeck 788 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods on North slope of Mesic Woodland.

Thelypteridaceae

Phegopteris hexagonoptera (Michx.) Fée, W.W. Overbeck 668 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods in second growth Mixed Mesophytic Forest growing with *Liriodendron tulipiferum*, *Sassafras albidum*, *Nyssa sylvatica*, and *Uvularia perfoliata*.

Thelypteris noveboracensis (L.) Nieuwl., W.W. Overbeck 527 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods in Mixed Mesophytic Woodland.

CONIFEROPHYTA

Cupressaceae

Juniperus virginiana L., W.W. Overbeck 1638 (EKY), Dolomitic Foothills, Abundant, Xeric, Prairie and Woodland. Collected at Reynolds Prairie from Xeric Limestone Prairie and also observed in all other parts of Garrard County, typically found on calcareous bedrock. At Camp Nelson Quarry too, R.L. Thompson 97-143 (BEREA).

Pinaceae

Pinus echinata P. Mill., W.W. Overbeck 1123 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods on lower slope and terrace of South facing hill

growing with *Quercus alba*, *Quercus velutina*, *Pinus virginiana*, *Nyssa sylvatica*, and *Carya glabra*. Also collected at Maywoods by Donna A. Godbey 670 (EKY).

Pinus virginiana P. Mill., W.W. Overbeck 726 (EKY), Knobs, Common, Xeric, Woodland. Collected at Tom Dorman State Nature Preserve in the Sub-xeric Forest and limestone outcrops above the Kentucky River growing with *Quercus alba*, *Hedyotis nigricans*, *Silphium trifoliatum*, *Danthonia spicata*, and *Andropogon virginicus*.

Tsuga canadensis (L.) Carrière, W.W. Overbeck 1613 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods on the North facing slope in a sheltered ravine at the southeastern corner of the lake. Associates include *Carya cordiformis* and *Acer rubrum*.

MAGNOLIOPHYTA: MONOCOTYLEDONAE (Monocots)

Alismataceae

Sagittaria latifolia Willd., W.W. Overbeck 1610 (EKY), Knobs, Uncommon, Aquatic. Collected on Calico Road in North Fork of Copper Creek.

Sagittaria montevidensis Cham. & Schltd., W.W. Overbeck 1002 (EKY), Knobs, Rare, Aquatic. Collected at Maywoods on lake margin in shallow open water. Also collected by R.L. Thompson 00-545 (BEREA) at Camp Nelson Quarry.

Agavaceae

Manfreda virginica (L.) Rose, W.W. Overbeck 1740 (EKY), Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected on Old Richmond Road.

**Yucca filamentosa* L., Edward T. Browne, Jr. and Elizabeth M. Browne 8879 (EKY), Dolomitic Foothills, Uncommon, Mesic, Ruderal. Collected on White Lick Road.

Alliaceae

Allium canadense L., R.L. Thompson 12-342 (BEREA), Knobs, Uncommon, Hydric, Woodland. Collected along creek floodplain in Calcareous Mesophytic Forest below dam growing with *Aesculus flava*, *Juglans cinerea*, *Quercus rubra*, *Ophioglossum vulgatum*, and *Desmodium nudiflorum*.

Allium cernuum Roth, W.W. Overbeck 1428 (EKY), Palisades, Rare, Xeric, Woodland. Collected at Tom Dorman State Nature Preserve above White Oak Creek in Sub-xeric Forest on cliffs near the Kentucky River growing with *Phlox bifida*.

Allium tricoccum Sol., Mary E. Wharton, 9714a, (KY), Palisades, Rare, Mesic, Woodland at White Oak Creek.

***Allium vineale* L., R.L. Thompson 12-324, 12-605 (BEREA), Knobs, Frequent, Mesic, Woodland and Ruderal. Collected at Maywoods from Ruderal old fields and disturbed forest edges. Also found at Camp Nelson Quarry by R.L. Thomson 04-198 (BEREA).

Nothoscordum bivalve (L.) Britton, W.W. Overbeck 252, 1071 (EKY), Palisades and Eden Hills, Uncommon, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve and Scott's Fork of Sugar Creek.

Amaryllidaceae

**Narcissus pseudonarcissus* L., W.W. Overbeck 198 (EKY), Palisades, Frequent, Mesic, Ruderal. Collected on Polly's Bend Road. Also observed in the Knobs on Hamilton Valley Road.

Asparagaceae

**Asparagus officinalis* L., W.W. Overbeck 1671 (EKY), Flatwoods, Uncommon, Mesic, Ruderal. Collected on New Hope Church Road and Highway 1972 growing with *Miscanthus sinensis* and *Quercus palustris*.

Araceae

Arisaema triphyllum (L.) Schott, W.W. Overbeck 248 (EKY), Palisades, Uncommon, Hydric, Woodland. Collected at Tom Dorman Nature Preserve on margin of White Oak Creek upstream from Rogers Road (Highway 1845). Also collected by Mary E. Wharton 9719 (KY) at White Oak Creek.

Arisaema dracontium (L.) Schott, Donna A. Godbey 325 (EKY), Knobs, Rare, Hydric, Woodland. Collected at Maywoods.

Commelinaceae

***Commelina communis* L., Donna A. Godbey 501 (EKY), Knobs, Uncommon, Mesic, Ruderal. Collected at Maywoods.

Commelina virginica L., W.W. Overbeck 1343 (EKY), Palisades, Rare, Hydric, Woodland. Collected at Tom Dorman State Nature Preserve on the floodplain of the Kentucky River

Tradescantia subaspera Ker Gawl., B.B. McInteer 2239 (KY), Palisades, Mesic, Woodland. Kentucky River at Camp Nelson.

Tradescantia virginiana L., W.W. Overbeck 431, 1265 (EKY), Palisades and Knobs, Uncommon, Mesic and Xeric, Woodland. Collected from Tom Dorman State Nature Preserve and Maywoods in shallow soils.

Convallariaceae

Maianthemum racemosum (L.) Link, Donna A. Godbey 48 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Polygonatum biflorum (Walter) Elliott, W.W. Overbeck 428, 1273 (EKY), Palisades, Eden Hills, Knobs, Common, Mesic, Woodland. Collected at Sally Brown Preserve, on Sad Road, and at Maywoods. Also collected by W. Meijer s.n. (KY) at White Oak Creek.

Polygonatum pubescens (Willd.) Pursh, W.W. Overbeck 1103, 1106 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve.

Cyperaceae

Carex albicans Willd. ex Spreng., W.W. Overbeck 395, 408 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve.

Carex amphibola Steud., W.W. Overbeck 382, 391 (EKY), Palisades and Knobs, Common, Mesic, Woodland. Collected at Sally Brown Preserve. Also collected at Maywoods by R.L. Thompson 12-587, 12-612 (BEREA).

Carex blanda Dewey, W.W. Overbeck 409, 547, 1141, 1201, 1243, 1259 (EKY), Palisades, Eden Hills, Dolomitic Foothills, and Knobs, Common, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve, Sally Brown Preserve, Jack Black Road, and Reynolds Prairie. Also collected at Maywoods by R.L. Thompson 12-329 (BEREA).

Carex cephalophora Muhl. ex Willd., W.W. Overbeck, 546, 1220, 1247, 1266 (EKY), Palisades, Eden Hills, Dolomitic Foothills and Knobs, Common, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve, Sally Brown Preserve, Jack Black Road, and Reynolds Prairie. Also collected by R.L. Thompson 12-575 (BEREA) at Maywoods.

Carex communis L.H. Bailey, W.W. Overbeck 1231 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve on steep mesic slope above the Kentucky River growing with *Silene caroliniana* and *Poa cuspidata*.

Carex conjuncta Boott., R.L. Thompson 97-441 (BEREA), Palisades, Common, Hydric, Ruderal. Collected at Camp Nelson Quarry.

Carex crawei Dewey, W.W. Overbeck 450, 1199 (EKY), Dolomitic Foothills, Rare, Xeric, Grassland. Collected at Reynolds Prairie in Xeric Limestone Prairie growing with *Sisyrinchium albidum*, *Silphium terebinthinaceum*, *Calamintha glabella*, and *Eleocharis compressa*.

Carex digitalis Willd., W.W. Overbeck 424, 475, 519, 1286 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods in Mesic Forest on access road on North slope on South side of lake.

Carex eburnea Boott, J. Campbell s.n. (KY), Palisades, Rare, Xeric, Woodland. Collected and observed at White Oak Creek in Sub-xeric Forest on a narrow ridge and cliffs above the Kentucky River.

Carex festucacea Schkuhr, W.W. Overbeck 1119 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Carex frankii Kunth, W.W. Overbeck 1414 (EKY), Knobs, Frequent, Hydric, Ruderal. Collected at Maywoods. Observed throughout Garrard County in roadside ditches and farm ponds as well as Camp Nelson Quarry too, R.L. Thompson 00-353 (BEREA).

Carex glaucoidea Tuck., Donna A. Godbey 135 (EKY), Knobs, Common, Mesic, Woodland. Collected at Maywoods. Additionally collected by R.L. Thompson 12-591 (BEREA).

Carex gracilescens Steud., W.W. Overbeck 358, 367, 398, 437, 542, 1281 (EKY), Palisades, Eden Hills, Knobs, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve, Jack Black Road, and at Maywoods.

Carex granularis Muhl. ex Willd., W.W. Overbeck 449 (EKY), Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected at Reynolds Prairie in seasonally wet rivulets and depressions. Also collected in the Palisades at Camp Nelson Quarry by R.L. Thompson 97-427 (BEREA).

Carex hirsutella Mack., W.W. Overbeck 1288 (EKY), Knobs, Common, Mesic, Woodland. Collected at Maywoods in infertile grasslands and Mesic Forest. Collected at Maywoods too by R.L. Thompson 12-611 (BEREA).

Carex jamesii Schwein., W.W. Overbeck 390, 412 (EKY), Palisades, Common, Mesic, Woodland. Collected at Sally Brown in Mesic Forest and Carcareous Mesophytic Forest.

Carex laxiflora Lam., W.W. Overbeck 359, 361, 363, 369, 404, 1314 (EKY), Palisades, Dolomitic Foothills, and Knobs, Mesic, Uncommon, Woodland. Collected at Sally Brown Preserve, Reynolds Prairie, and Maywoods in Mesic Forest.

Carex leavenworthii Dewey, W.W. Overbeck 523, 1178 (EKY), Outer Bluegrass and Knobs, Uncommon, Mesic, Grassland and Woodland. Collected at Wallacetown Road and Maywoods.

Carex lucorum Willd. ex Link, W.W. Overbeck 1118, 1126 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Carex lurida Wahlenb., R.L. Thompson 12-592 (BEREA), Knobs, Uncommon, Hydric, Grassland and Woodland. Collected at Maywoods on lake margin.

Carex mesochorea Mack., R.L. Thompson 12-570 (BEREA), Knobs, Common, Mesic, Grasslands and Woodlands. Collected at Maywoods in old fields and forest edges.

Carex muhlenbergii Schkuhr ex Willd., W.W. Overbeck 501, 1236, 1238, 1544, 1270 (EKY), Palisades, Inner Bluegrass, and Outer Bluegrass, Uncommon, Mesic, Grassland and Woodland.

Carex nigromarginata Schwein., W.W. Overbeck 365 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Carex normalis Mack., W.W. Overbeck 1209 (EKY), Dolomitic Foothills, Uncommon, Mesic, Grassland. Collected at Reynolds Prairie.

Carex pennsylvanica Lam., W.W. Overbeck 362 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Carex platyphylla Carey, R. Cranfill 2500(KY), Palisades, Mesic, Uncommon, Woodland. Collected at White Oak Creek.

Carex purpurifera Mack., W.W. Overbeck 368 (EKY), Knobs, Uncommon, Hydric, Woodland. Collected at Maywoods on the bank of Fall Lick Creek.

Carex rosea Schkuhr ex Willd., W.W. Overbeck 518 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods in Calcareous Mesophytic Forest below dam. Also collected by R.L. Thompson 12-595, 12-613 (BEREA) at Maywoods.

Carex sparganioides Muhl. ex Willd., W.W. Overbeck 381, 389, 1230 (EKY), Palisades, Common, Mesic, Woodland and Grassland. Collected at Sally Brown Preserve.

Carex styloflexa Buckley, W.W. Overbeck 442, 446, 1132 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Carex swanii (Fernald) Mack., Donna A. Godbey 136, 138 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods. Also collected by R.L. Thompson 12-577 (BEREA) at Maywoods.

Carex texensis (Torr.) L.H. Bailey, W.W. Overbeck 1191, 1193 (EKY), Dolomitic Foothills, Uncommon, Mesic, Grassland and Ruderal. Collected at Reynolds Prairie in mesic old field above the creek.

Carex tribuloides Wahlenb., W.W. Overbeck 536 (EKY), Knobs, Uncommon, Hydric, Grassland. Collected on Calico Road on creek margin.

Carex umbellata Schkuhr ex Willd., W.W. Overbeck 365, 426, 1080, 1136, 1137, 1156 (EKY), Knobs, Uncommon, Xeric, Woodland. Collected at Maywoods on ridge tops and other xeric wooded habitats.

Carex virescens Muhl. ex Willd., Donna A. Godbey 161 (EKY), Knobs, Uncommon, Mesic, Grassland. Collected at Maywoods on roadsides and stream banks.

Carex vulpinoidea Michx., W.W. Overbeck 525 (EKY), Knobs, Common, Hydric, Woodland. Collected at Maywoods on old roadbeds and creekbanks. Also found at Camp Nelson Quarry by R.L. Thompson 97-106 (BEREA).

Carex willdenowii Schkuhr ex Willd., W.W. Overbeck 517 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods above Manager's house on woods edge with *Rosa carolina*.

Cyperus bipartitus Torr., R.L. Thompson 03-877 (BEREA), Palisades, Uncommon, Hydric, Ruderal. Collected at Camp Nelson Quarry.

Cyperus esculentus L., W.W. Overbeck 862 (EKY), Knobs, Uncommon, Hydric, Ruderal. Collected on Hamilton Valley Road near Narrow Gap Road in old fields and stream margins.

Cyperus erythrorhizos Muhl., Randy L. Mears 459 (EKY), Palisades, Uncommon, Hydric, Ruderal. Collected on the banks of the Kentucky River at Lock No. 8.

Cyperus flavescens L., R.L. Thompson 96-605 (BEREA), Palisades, Uncommon, Hydric, Ruderal. Collected at Camp Nelson Quarry.

**Cyperus iria* L., W.W. Overbeck 655 (EKY), Knobs, Uncommon, Hydric, Ruderal. Collected at Maywoods.

Cyperus odoratus L., W.W. Overbeck 1370 (EKY), Knobs, Uncommon, Hydric, Ruderal. Collected at the White Lick Creek Church on a stream margin at the edge of mowed lawn. Also collected by Randy Mears 460 (EKY) at the Kentucky River.

Cyperus squarrosus L., R.L. Thompson 96-604 (BEREA), Palisades, Uncommon, Hydric, Ruderal. Collected at Camp Nelson Quarry.

Cyperus strigosus L., W.W. Overbeck 943, 1446 (EKY), Palisades, Common, Hydric, Ruderal. Collected on the Dix River upstream from Highway 52. Also collected at Camp Nelson Quarry by R.L. Thompson 96-604 (BEREA).

Eleocharis compressa Sull., W.W. Overbeck 1188 (EKY), Dolomitic Foothills, Rare, Hydric, Grassland. Collected at Reynolds Prairie in seasonally wet depressions.

Eleocharis erythropoda Steud., W.W. Overbeck 603 (EKY), Knobs, Uncommon, Hydric, Woodland. Collected at Maywoods along lake margin.

Eleocharis ovata (Roth) Roem. & Schult., W.W. Overbeck 803, 961, 1356, 1393, 1679 (EKY), Knobs, Common, Hydric, Woodland. Collected at Harmon's Lick Road in a calcareous seep, Joe Damrell Road at the Garrard County border in a wet ditch, and at Maywoods at the lake edge. Others have collected and identified the closely related *Eleocharis obtusa* (Willd.) Schult., Donna A. Godbey 444, 533 (EKY) from Maywoods and R.L. Thompson 00-361 (BEREA) from Camp Nelson Quarry.

Eleocharis tenuis (Willd.) Schultes, W.W. Overbeck 1169, 1204 (EKY), Dolomitic Foothills, Frequent, Mesic, Woodland. Collected at Reynolds Prairie. Also collected at Maywoods by Donna A. Godbey 139 (EKY)

Kyllinga pumila Michx., W.W. Overbeck 654 (EKY), Knobs, Uncommon, Hydric, Ruderal. Collected at Maywoods in a seasonally wet gravel road ditch at the far end of the dam.

Rhynchospora capitellata (Michx.) Vahl, W.W. Overbeck 1481 (EKY), Knobs, Uncommon, Hydric, Grassland. Collected at Maywoods associated with wet soil.

Rhynchospora glomerata (L.) Vahl, W.W. Overbeck 577, 1372 (EKY), Knobs, Uncommon, Hydric, Grassland. Collected in wet grassy areas at Maywoods and White Lick Creek at Cartersville Road (Highway 954) where it grows with *Hibiscus moscheutos*.

Schoenoplectus tabernaemontani (K.C. Gmel.) Palla, W.W. Overbeck 615, 1374 (EKY), Knobs, Uncommon, Hydric, Grassland. Collected at Hamilton Valley Road at Narrow Gap Road, White Lick Creek at Cartersville Road (Highway 954) in open wetlands, and at Camp Nelson Quarry by R.L. Thompson 00-344 (BEREA).

Scirpus atrovirens Willd., R.L. Thompson 00-382 (BEREA), Palisades, Common, Hydric, Ruderal. Collected at Camp Nelson Quarry. Also collected by Donna A. Godbey 169 (EKY) at Maywoods.

Scirpus cyperinus (L.) Kunth, W.W. Overbeck 473, 1354 (EKY), Knobs, Uncommon, Hydric, Grassland. Collected at White Lick Creek and Cartersville Road (Highway 954) and Maywoods in wetland margins and wet depressions. Also collected at Camp Nelson Quarry by R.L. Thompson 00-509 (BEREA).

Scirpus pendulus Muhl. ex Elliott, W.W. Overbeck 454 (EKY), Dolomitic Foothills, Rare, Hydric, Grassland. Collected at Reynolds Prairie in seasonally wet depressions growing with *Eleocharis compressa*, *Calamintha glabella*, and *Carex crawei*.

Scirpus polyphyllus Vahl, W.W. Overbeck 1680 (EKY), Knobs, Uncommon, Hydric, Woodland. Collected on Joe Damrell Road on the Garrard County border in a wet ditch.

Scleria oligantha Michx., W.W. Overbeck 466 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods on South facing slopes of Oak-Hickory Forest and xeric ridges.

Scleria pauciflora Muhl. ex Willd., W.W. Overbeck 554 (EKY), Dolomitic Foothills, Rare, Xeric, Grassland. Collected at Reynolds Prairie in Xeric Limestone Prairie.

Scleria triglomerata Michx., W.W. Overbeck 733 (EKY), Palisades and Knobs, Rare, Hydric, Grassland. Collected at Tom Dorman State Nature Preserve in a powerline cut. Also collected by R.L. Thompson 12-596 (BEREA) at Maywoods in low grassland below the dam in restored prairie.

Dioscoreaceae

***Dioscorea polystachya* Turcz., W.W. Overbeck 541 (EKY), Palisades, Common, Mesic, Woodland. Collected at the end of Poor House Road and observed commonly along disturbed creeks.

Dioscorea villosa L., W.W. Overbeck 444 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected on North facing slopes at Maywoods.

Hyacinthaceae

Camassia scilloides (Raf.) Cory, W.W. Overbeck 172 (EKY), Eden Hills, Rare, Mesic, Woodland. Collected on Teatersville Road. Also a large colony was observed on the North facing slope at Reynolds Prairie in a Mesic Forest.

***Ornithogalum umbellatum* L., Mary E. Wharton 9867 (KY), Palisades, Frequent, Ruderal. Collected at White Oak Creek.

Hydrocharitaceae

**Najas minor* All., W.W. Overbeck 1607 (EKY), Knobs, Uncommon, Aquatic. Collected at Maywoods from submerged lake margin.

Hypoxidaceae

Hypoxis hirsuta (L.) Coville, W.W. Overbeck 342 (EKY), Knobs, Uncommon, Xeric, Woodland. Collected at Maywoods on South facing slopes and ridges and in grassy openings.

Iridaceae

**Belamcanda chinensis* (L.) DC., W.W. Overbeck 1378 (EKY), Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected on Brock Road on the edge of a Xeric Limestone Prairie. Also collected by Mary E. Wharton 10345 (KY) on dry bluffs of White Oak Creek.

Iris cristata Soland ex Aiton, W.W. Overbeck 335 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods, observed in many ravines.

Iris verna L., R.L. Thompson 13-580 (BEREA), Knobs, Rare, Mesic, Woodland. Collected at the end of Joe Damrell Road.

Sisyrinchium albidum Raf., W.W. Overbeck 1145 (EKY), Dolomitic Foothills, Rare, Xeric, Grassland. Collected at Renolds Prairie growing with *Schizachyrium scoparium*, *Ratibida pinnata*, *Silphium terebinthinaceum*, and *Hedyotis nigricans*.

Sisyrinchium angustifolium P. Mill., W.W. Overbeck 468 (EKY), Knobs, Uncommon, Mesic, Grassland and Woodland. Collected at Maywoods along forested logging roads. Also collected by R.L. Thompson 97-48 (BEREA) at Camp Nelson and R.C. Clark 24411 (EKY) along the Dix River.

Juncaceae

Juncus acuminatus Michx., W.W. Overbeck 602, 1359, 1373 (EKY), Knobs, Uncommon, Hydric, Grassland. Collected at Maywoods on lake margin.

Juncus diffusissimus Buckley, R.L. Thompson 00-375, (BEREA), Palisades, Uncommon, Hydric, Grassland. Collected at Camp Nelson Quarry. Also collected at Maywoods by Donna A. Godbey 36 (EKY).

Juncus effusus L. var. *solutus* Fernald & Weig., W.W. Overbeck 591, 618, 872, 995, 1298 (EKY), Knobs, Common, Hydric, Grassland. Collected at Calico Road at Copper Creek, at White Lick Creek, and at Maywoods.

Juncus marginatus Rostk., W.W. Overbeck 586, 653, 1331 (EKY), Knobs, Uncommon, Hydric, Grassland. Collected at Gabbard Road in a low marshy area and Maywoods.

Juncus tenuis Willd., W.W. Overbeck 867, 1297 (EKY), Knobs, Frequent, Mesic, Woodland. Collected at Calico Road at Copper Creek and Maywoods in compacted soil of logging roads. Also collected by R.L. Thompson 97-136 (BEREA) at Camp Nelson Quarry.

Juncus torreyi Coville, W.W. Overbeck 1321 (EKY), Knobs, Uncommon, Hydric, Grassland. Collected on a wet ditch of Dave Eden Road close to the intersection of Highway 954.

Luzula multiflora (Ehrh.) Lej., W.W. Overbeck 352, 422, (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Lemnaceae

Lemna minor L., W.W. Overbeck 1454, (EKY), Palisades, Common, Aquatic, Woodland. Collected at Tom Dorman Nature Preserve in White Oak Creek. Also collected by R.L. Thompson 03-844 (BEREA) at Camp Nelson Quarry pond.

Liliaceae

Erythronium albidum Nutt., W.W. Overbeck 163 (EKY), Eden Hills, Uncommon, Mesic, Woodland. Collected on Back Creek Road near Highway 1193.

Erythronium americanum Ker Gawl., W.W. Overbeck 166, 1066, 1105 (EKY), Palisades and Eden Hills, Common, Woodland. Collected on Long Branch Road in the Eden Hills and Sally Brown Preserve and Tom Dorman State Nature Preserve in the Palisades.

Lilium canadense L., W.W. Overbeck 1659 (EKY), Knobs, Rare, Hydric, Grassland. Collected on Gabbard Road in a powerline cut growing with *Eupatorium fistulosum*.

Medeola virginiana L., Donna A. Godbey 246 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Orchidaceae

Aplectrum hyemale (Muhl. ex Willd.) Torr., W.W. Overbeck 1686 (EKY), Dolomitic Foothills, Rare, Mesic, Woodland. Collected at Reynolds Prairie in *Juniperus virginiana* thickets in mossy hummocks.

Corallorhiza wisteriana Conrad, Donna A. Godbey 75 (EKY), Knobs, Rare, Mesic, Woodland. Collected at Maywoods and not recently observed.

Cypripedium acaule Aiton, Donna A. Godbey 248 (EKY), Knobs, Rare, Mesic, Woodland. Collected at Maywoods and observed growing with *Kalmia latifolia*, *Pinus virginiana*, and *Pinus echinata*.

Goodyera pubescens (Willd.) R.Br., Donna A. Godbey 408 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods and observed growing with *Tsuga canadensis*.

Liparis liliifolia (L.) Rich. ex Lindl., W.W. Overbeck 1700 (EKY), Palisades, Uncommon, Mesic, Woodland. Photo voucher taken from Sally Brown Preserve. Also observed at Maywoods.

Malaxis unifolia Michx., Donna A. Godbey 376 (EKY), Knobs, Rare, Mesic, Woodland. Collected at Maywoods, but not recently observed.

Platanthera ciliaris (L.) Lindl., R.L. Thompson 13-577 (BEREA), Knobs, Hydric, Rare, Woodland. Collected at the end of Joe Damrell Road.

Spiranthes lacera (Raf.) Raf., W.W. Overbeck 1699 (EKY), Palisades, Rare, Xeric, Woodland. Photo voucher taken at Tom Dorman State Nature Preserve on trail edges near utility easements.

!*Spiranthes magnicamporum* Sheviak, W.W. Overbeck 1631 (EKY), Dolomitic Foothills, Xeric, Grassland. Collected at Reynolds Prairie. Plant associates include *Andropogon gerardii*, *Schizachyrium scoparium*, and *Bouteloua curtipendula*.

Tipularia discolor (Pursh) Nutt., Donna A. Godbey 629 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods and observed growing with *Acer rubrum*, *Pinus virginiana*, and *Fagus grandifolia*.

Poaceae

**Agrostis gigantea* Roth, W.W. Overbeck 652, 802, 1296 (EKY), Knobs, Uncommon, Mesic to Hydric, Grassland. Collected on Calico Road in a clear cut Mesic Forest and at Maywoods.

Agrostis hyemalis (Walter) BSP., W.W. Overbeck 787, 797 (EKY), Knobs, Uncommon, Mesic, Ruderal. Collected at Maywoods in the gravel road bed of the dam. Also collected at Maywoods by R.L. Thompson 12-588 (BEREA).

Agrostis perennans (Walter) Tuck., W.W. Overbeck 877, 1412 (EKY), Knobs, Uncommon, Mesic, Ruderal. Collected at Maywoods on roadsides and in fields.

Andropogon gerardii Vitman, W.W. Overbeck 1404, 1677 (EKY), Dolomitic Foothills, Knobs, Uncommon, Mesic, Grassland. Collected at Reynolds Prairie and Joe Damrell Road. Also observed growing on Kentucky River Palisades scour-zones at Tom Dorman Nature Preserve.

Andropogon virginicus L., W.W. Overbeck 869, 1468, 1480 (EKY), Knobs, Frequent, Mesic to Xeric, Grassland and Ruderal. Collected at Maywoods in fields and roadways. Also collected by R.L. Thompson 03-859 (BEREA) at Camp Nelson Quarry.

**Anthoxanthum odoratum* L., W.W. Overbeck 443, 1258 (EKY), Palisades, Knobs, Collected at Tom Dorman State Nature Preserve in trail edges and utility easements and at Maywoods in fields and roadways.

Aristida dichotoma Michx., W.W. Overbeck 864 (EKY), Knobs, Rare, Mesic, Grassland. Collected on Hamilton Valley Road between Narrow Gap Road and Maywoods Road in hay fields growing with *Eragrostis spectabilis* and *Sorghastrum nutans*.

Aristida oligantha Michx., W.W. Overbeck 898 (EKY), Dolomitic Foothills, Rare, Xeric, Grassland. Collected on Old Richmond Road on a eroding calcareous slope growing with *Asclepias tuberosa*, *Rosa carolina*, and *Danthonia spicata*.

***Arthraxon hispidus* (Thunb.) Makino, W.W. Overbeck 911 (EKY), Dolomitic Foothills, Uncommon, Mesic, Ruderal. Collected on Old Richmond Road on a disturbed roadside growing with *Prunus mahaleb*.

Arundinaria gigantea (Walter) Muhl., W.W. Overbeck 174, 1627 (EKY), Eden Hills, Uncommon, Mesic, Woodland. Collected on Teatersville Road and at Braudus Branch Road in Calcareous Mesophytic Forest growing with *Asimina triloba*, *Fagus grandifolia*, and *Liriodendron tulipifera*.

!*Bouteloua curtipendula* (Michx.) Torr., W.W. Overbeck 1318, 1334 (EKY), Dolomitic Foothills, Rare, Xeric, Grassland. Collected at the South end of Old Richmond Road, accessed North of Drakes Creek Road, growing with *Oligoneuron rigidum*, *Asclepias viridiflora*, *Ratibida pinnata*, and *Schizachyrium scoparium*.

Brachyelytrum erectum (Schreb.) P. Beauv., W.W. Overbeck 794 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods on North facing slope of Mesic Forest.

**Bromus commutatus* Schrad., W.W. Overbeck 477 (EKY), Knobs, Uncommon, Mesic, Ruderal. Collected at White Lick Creek at Highway 954 (Cartersville Road) on roadside disturbed gravel. Also collected by R.L. Thompson 12-573 (BEREA) at Maywoods.

***Bromus inermis* Leyss., W.W. Overbeck 1721 (EKY), Palisades, Uncommon, Mesic, Ruderal. Collected at Highway 52 and the Dix River next to the bridge.

**Bromus erectus* Huds., W.W. Overbeck 1190 (EKY), Dolomitic Foothills, Uncommon, Mesic to Xeric, Grassland. Collected at Reynolds Prairie associating with *Juniperus virginiana*.

***Bromus japonicus* Thunb., R.L. Thompson 97-114 (BEREA), Palisades, Uncommon, Mesic, Ruderal. Collected at Camp Nelson Quarry. Also collected by R.L. Thompson 12-584 (BEREA) at Maywoods.

Bromus pubescens Muhl., W.W. Overbeck 506 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve in Mesic Forest.

***Bromus racemosus* L., W.W. Overbeck 1272, 1242 (EKY), Palisades, Inner Bluegrass, Uncommon, Mesic, Ruderal. Collected at Sally Brown Preserve and Highway 1355 in disturbed soil.

***Bromus tectorum* L., W.W. Overbeck 372 (EKY), Palisades, Uncommon, Xeric, Ruderal. Collected at Sally Brown Preserve in the gravel parking lot. Also collected at Camp Nelson Quarry by R.L. Thompson 97-420 (BEREA).

Chasmanthium latifolium (Michx.) Yates, W.W. Overbeck 688, 845, 1550, 1589 (EKY), Palisades, Uncommon, Mesic to Hydric, Woodland. Collected at Sally Brown Preserve and the Dix River upstream of Highway 52. Observed at Tom Dorman State Nature Preserve in the Kentucky River floodplain and also in an unusual habitat above White Oak Creek in Sub-xeric Forest on cliffs and bluffs growing with *Juniperus virginiana*, *Fraxinus quadrangulata*, *Quercus muhlenbergii*, *Rosa carolina*, *Ceanothus americanus*, *Danthonia spicata*, and *Elymus svensonii*.

Cinna arundinacea L., W.W. Overbeck 738 (EKY), Palisades, Uncommon, Hydric, Woodland. Collected at Tom Dorman State Nature Preserve in the Kentucky River Floodplain.

**Dactylis glomerata* L., R.L. Thompson 97-410 (BEREA), Palisades, Frequent, Mesic, Ruderal. Collected at Camp Nelson Quarry.

Danthonia spicata (L.) P. Beauv., Donna A. Godbey 137 (EKY), Knobs, Common, Xeric, Woodland. Collected at Maywoods.

!*Deschampsia caespitosa* (L.) P. Beauv. [*Deschampsia glauca* Hartman], J. Campbell, s.n. (KY), Palisades, Rare, Mesic to Hydric, Grassland. Collected on limestone bedrock and cobblebars of the scour-zone of the Kentucky River near the mouth of White Oak Creek.

Dichanthelium acuminatum (Sw.) Gould & C.A. Clark, W.W. Overbeck 520, 1294, 1413, 1517, (EKY), Dolomitic Foothills, Knobs, Common, Woodland and Grassland. Collected at Reynolds Prairie and Maywoods.

Dichanthelium boscii (Poir.) Gould & C.A. Clark, W.W. Overbeck 672, 1425 (EKY), Palisades, Knobs, Uncommon, Mesic, Woodland. Collected at Tom Dorman Nature Preserve and Maywoods.

Dichanthelium clandestinum (L.) Gould, W.W. Overbeck 472 (EKY), Knobs, Frequent, Mesic to Hydric, Woodland and Grassland. Collected at Highway 954 (Cartersville Road) and White Lick Creek. Observed across the county in old fields and native plant communities.

Dichanthelium commutatum (Schult.) Gould, W.W. Overbeck 1285, 1289 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods. Collected at Maywoods too by R.L. Thompson 12-308 (BEREA).

Dichanthelium depauperatum (Muhl.) Gould, W.W. Overbeck 1287 (EKY), Knobs, Uncommon, Xeric, Woodland. Collected at Maywoods.

Dichanthelium dichotomum (L.) Gould., Donna A. Godbey 547 (EKY), Knobs, Uncommon, Mesic to Hydric, Woodland. Collected at Maywoods.

Dichanthelium laxiflorum (Lam.) Gould, W.W. Overbeck 1260 (EKY), Knobs, Uncommon, Xeric, Woodland. Collected on ridges and open woodlands at Maywoods. Also collected by R.L. Thompson 12-315, 12-593 (BEREA) at Maywoods on an old road bed.

Dichanthelium polyanthes (Schult.) Mohlenb., W.W. Overbeck 1325 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected on Dave Eden Road just off Highway 954 (Cartersville Road).

***Echinochloa crus-galli* (L.) Beauv., W.W. Overbeck 631, 684, 696, 816, 841 (EKY), Palisades, Outer Bluegrass, Knobs, Frequent, Mesic to Hydric, Ruderal. Collected at the Dix River and Paint Lick Creek on cobble bars. Also collected At Sally Brown Preserve in the Kentucky River floodplain. Collected on Hamilton Valley Road in low fields. Observed across the county on roadsides.

Echinochloa muricata (P. Beauv.) Fernald., Donna A. Godbey 571 (EKY), Knobs, Uncommon, Hydric, Ruderal. Collected at Maywoods.

***Eleusine indica* (L.) Gaertn., W.W. Overbeck 709, 846 (EKY), Palisades, Common, Xeric, Ruderal. Collected at Sally Brown Preserve and Kings Mill Road at Herrington Lake boat launch.

Elymus hystrix L., W.W. Overbeck 717, 1339 (EKY), Palisades, Eden Hills, Uncommon, Mesic to Xeric, Woodland. Collected on Teatersville Road and at Kings Mill Road at Herrington Lake. Observed across the county including the Outer Bluegrass and at Maywoods in the Knobs. Also collected at Camp Nelson Quarry by R.L. Thompson 03-857 (BEREA).

Elymus macgregorii R.E. Brooks & J.J.N. Campb., W.W. Overbeck 1340 (EKY), Eden Hills, Uncommon, Mesic to Hydric, Woodland. Collected on Teatersville Road. This is a recently described species which inhabits stream banks and rich woods throughout the Bluegrass Basin.

Elymus riparius Wieg., W.W. Overbeck 819, 1658 (EKY), Outer Bluegrass, Knobs, Uncommon, Hydric, Grassland. Collected on Paint Lick Creek at Highway 52 and on Gabbard Road.

!*Elymus svensonii* Church, J. Campbell 17301-87 (KY), Palisades, Rare, Xeric, Woodland. Collected on a narrow ridge above the mouth of White Oak Creek and the Kentucky River. Currently still extant at this location where it was observed and photo voucher taken: W.W. Overbeck 1691, 1692 (EKY).

Elymus villosus Muhl. ex Willd., W.W. Overbeck 540 (EKY), Outer Bluegrass, Common, Mesic, Woodland. Collected at the end of Poor House Road.

Elymus virginicus L., W.W. Overbeck 815, 1449 (EKY), Palisades, Outer Bluegrass, Frequent, Mesic to Hydric, Woodland. Collected along the Dix River upstream from Highway 52 and at Paint Lick Creek at Highway 52.

Eragrostis capillaris (L.) Nees, W.W. Overbeck 1486 (EKY), Knobs, Uncommon, Mesic, Ruderal. Collected on Narrow Gap Road.

***Eragrostis cilianensis* (All.) Vignolo ex Janch., W.W. Overbeck 700 (EKY), Eden Hills, Uncommon, Mesic, Ruderal. Collected on Highway 1295 West of Garrard County line.

Eragrostis pectinacea (Michx.) Nees ex Steud., W.W. Overbeck 595, 952 (EKY), Palisades, Knobs, Uncommon, Mesic, Ruderal. Collected on the Dix River and also at Maywoods.

Eragrostis spectabilis (Pursh) Steud., W.W. Overbeck 855, 1416, 1482, 1572 (EKY), Palisades, Knobs, Uncommon, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve from a utility easement, on Rogers Road in a mowed right-of-way, and Hamilton Valley Road in a low infertile hay field. Also collected by R.L. Thompson 00-557 (BEREA) at Camp Nelson Quarry.

***Festuca arundinacea* Schreb., Donna A. Godbey, 694 (EKY), Knobs, Abundant, Mesic, Ruderal. Collected at Maywoods. Also collected by R.L. Thompson 97-445 (BEREA) at Camp Nelson Quarry. This species was observed throughout Garrard County in fields.

Festuca subverticillata (Pers.) E.B. Alexeev, W.W. Overbeck 508 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve. Observed at Maywoods.

Glyceria striata (Lam.) Hitchc., R.L. Thompson 12-602 (BEREA), Knobs, Uncommon, Hydric, Woodland. Collected at Maywoods in seasonally wet fields and woods.

*****Holcus lanatus* L.**, W.W. Overbeck 495 (EKY), Knobs, Uncommon, Xeric, Ruderal. Collected on Gabbard Road in eroded soil on clear cut slopes near the road.

Hordeum pusillum Nutt., W.W. Overbeck 1250 (EKY), Palisades, Uncommon, Mesic to Xeric, Ruderal. Collected on Highway 52 at the Dix River. Also collected by R.L. Thompson 97-435 at Camp Nelson Quarry and 12-589 (BEREA) Maywoods.

Leersia oryzoides (L.) Sw., W.W. Overbeck 811, 908 (EKY), Palisades, Flatwoods, Uncommon, Hydric, Woodland. Collected along the Dix River and Old Richmond Road at Brock Road growing with *Quercus palustris* and *Quercus bicolor*. At Camp Nelson Quarry too by R.L. Thompson 03-866 (BEREA).

Leersia virginica Willd., W.W. Overbeck 796 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Leptochloa panicea (Retz.) Ohwi, W.W. Overbeck 701 (EKY), Palisades, Rare, Xeric, Ruderal. Collected at Kings Mill Road near Herrington Lake.

*****Lolium perenne* L.**, W.W. Overbeck 1200 (EKY), Dolomitic Foothills, Uncommon, Mesic, Ruderal. Collected at Reynolds Prairie in disturbed ground.

Melica mutica Walter, W.W. Overbeck 407 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve.

*****Microstegium vimineum* (Trin.) A. Camus.**, W.W. Overbeck 1743 (EKY), Knobs, Common, Woodlands. Collected at Maywoods.

*****Miscanthus sinensis* Anderss.**, W.W. Overbeck 1619 (EKY), Flatwoods, Uncommon, Mesic, Ruderal. Collected at Good Hope Church Road and Highway 1972 growing with *Quercus palustris*, *Asparagus officinale*, and *Festuca arundinacea*.

Muhlenbergia frondosa (Poir.) Fernald, W.W. Overbeck 844, 951, 1452 (EKY), Palisades, Uncommon, Mesic to Hydric, Woodland. Collected at the Dix River and Sally Brown Preserve.

Muhlenbergia sylvatica Torr., Donna A. Godbey 538 (EKY), Knobs, Common, Mesic, Woodland. Collected at Maywoods.

Muhlenbergia tenuiflora (Willd.) BSP., W.W. Overbeck 737 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve.

Panicum capillare L., R.L. Thompson 00-515 (BEREA), Palisades, Uncommon, Mesic, Ruderal. Collected at Camp Nelson Quarry.

Panicum dichotomiflorum Michx., R.L. Thompson 00-556 (BEREA), Palisades, Uncommon, Hydric, Ruderal. Collected at Camp Nelson Quarry. Also collected by Donna A. Godbey 539 (EKY) at Maywoods.

Panicum flexile (Gattinger) Scribn., W.W. Overbeck 900, 901, 910, 954, 1431, 1497 (EKY), Palisades, Dolomitic Foothills, Common, Xeric, Woodland and Grassland. Collected at Tom Dorman State Nature Preserve, Old Richmond Road in eroding calcareous soil, and Reynolds Prairie in Xeric Limestone Prairie.

Panicum philadelphicum Bernh. ex Trin., W.W. Overbeck 1484 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected on Narrow Gap Road.

Panicum rigidulum Bosc ex Nees, W.W. Overbeck 605 (EKY), Knobs, Uncommon, Hydric, Grassland. Collected at Maywoods on lake margin.

***Paspalum dilatatum* Poir., W.W. Overbeck 1662 (EKY), Knobs, Uncommon, Mesic, Ruderal. Collected on Gabbard Road.

Paspalum laeve Michx., W.W. Overbeck 858, 865 (EKY), Palisades, Knobs, Common, Mesic, Ruderal. Collected on Rogers Road (Highway 1845) and Hamilton Valley Road.

Paspalum setaceum Michx., W.W. Overbeck 1573 (EKY), Palisades, Uncommon, Xeric Grassland. Collected on utility easements.

**Phleum pratense* L., W.W. Overbeck 1271 (EKY), Inner Bluegrass, Common, Mesic, Ruderal. Collected on Highway 1355.

***Poa annua* L., W.W. Overbeck 187 (EKY), Palisades, Common, Mesic, Ruderal. Collected at the Dix River. Also collected at Maywoods by R.L. Thompson 12-331 (BEREA).

Poa autumnalis Muhl. ex Elliott, W.W. Overbeck 212, 246 (EKY), Palisades, Knobs, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve and Maywoods.

***Poa compressa* L., R.L. Thompson 97-123 (BEREA), Palisades, Uncommon, Xeric, Ruderal. Collected at Camp Nelson Quarry.

Poa cuspidata Nutt., W.W. Overbeck 351 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods. Observed at Sally Brown Preserve growing with *Silene caroliniana* and *Carex communis*.

***Poa pratensis* L., W.W. Overbeck 349, 538 (EKY), Knobs, Abundant, Mesic, Ruderal. Collected at Maywoods. Observed throughout the county in fields and disturbed areas.

Poa sylvestris A. Gray, W.W. Overbeck 1170, 1206 (EKY), Dolomitic Foothills, Uncommon, Mesic, Woodland. Collected at Reynolds Prairie in Mesic Forest growing with *Lonicera prolifera*, *Asclepias purpurascens*, *Trillium sessile*, *Aplectrum hymale*, *Phlox divaricata*, and *Sanicula odorata*.

!*Schizachne purpurascens* (Torr.) Swallen, W.W. Overbeck 1698 (EKY), Palisades, Rare, Mesic to Xeric, Woodland. Collected at Sally Brown Preserve at the end of Crutcher Trail past the Millstones in Millstone Creek below a precipitous limestone cliff above the Kentucky River.

Schizachyrium scoparium (Michx.) Nash, W.W. Overbeck 904, 983 (EKY), Dolomitic Foothills, Knobs, Uncommon, Xeric, Grassland. Collected at Reynolds Prairie and at the end of Jones Road.

Setaria parviflora (Poir.) Kerguélen, R.L. Thompson 00-554 (BEREA), Palisades, Uncommon, Mesic, Ruderal. Collected at Camp Nelson Quarry.

**Setaria pumila* (Poir.) Roem. & Schult., W.W. Overbeck 609, 619, 625, 690, 710, 1445 (EKY), Palisades, Knobs, Frequent, Mesic, Ruderal. Collected at the Dix River, Hamilton Valley Road, Highway 954 and Maywoods. Observed throughout the county in disturbed soil.

Sorghastrum nutans (L.) Nash, W.W. Overbeck 866, 982, 1403, 1598 (EKY), Palisades, Knobs, Uncommon, Mesic to Xeric, Grassland. Collected at Sally Brown Preserve in a planted prairie, Hamilton Valley Road, Jones Road, and Maywoods.

**Sorghum bicolor* (L.) Moench, W.W. Overbeck 942 (EKY), Palisades, Uncommon, Mesic, Ruderal. Collected at Tom Dorman State Nature Preserve at the entrance in disturbed soil.

***Sorghum halepense* (L.) Pers., W.W. Overbeck 825 (EKY), Palisades, Abundant, Mesic, Ruderal. Collected at the Highway 52 bridge over the Dix River. Observed throughout Garrard County.

Sphenopholis nitida (Biehler) Scribn., W.W. Overbeck 427, 448 (EKY), Dolomitic Foothills, Knobs, Uncommon, Mesic to Hydric, Woodland. Collected at Reynolds Prairie and Maywoods.

Sphenopholis obtusata (Michx.) Scribn., W.W. Overbeck 340 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Sporobolus cryptandrus (Torr.) A. Gray, W.W. Overbeck 1675 (EKY), Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected on Brock Road, East of Old Richmond Road.

Sporobolus neglectus Nash, J. Campbell s.n. (KY), Inner Bluegrass, Uncommon, Xeric, Ruderal. US 27 near Shine Farm.

Sporobolus vaginiflorus (Torr. ex A. Gray) Alph. Wood, W.W. Overbeck 921, 1674 (EKY), Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected on Brock Road and Reynolds Prairie in Xeric Limestone Prairie. Collected at Camp Nelson Quarry by R.L. Thompson 96-610 (BEREA).

Tridens flavus (L.) Hitchc., R.L. Thompson 96-610 (BEREA), Palisades, Abundant, Mesic, Grasslands. Collected at Camp Nelson Quarry. Also collected by Donna A. Godbey 567 (EKY).

Tripsacum dactyloides (L.) L., R.L. Thompson 12-579 (BEREA), Knobs, Uncommon, Hydric, Grassland. Collected at Maywoods in planted prairie.

Potamogetonaceae

Potamogeton diversifolius Raf., W.W. Overbeck 1437, 1609 (EKY), Knobs, Rare, Aquatic. Collected at Maywoods in submerged water.

Potamogeton nodosus Poir., W.W. Overbeck 1436, 1608 (EKY), Knobs, Rare, Aquatic. Collected at Maywoods in submerged water.

Smilacaceae

Smilax bona-nox L., W.W. Overbeck 386 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve.

Smilax ecirrhata (Engelm. ex Kunth) S. Watson, Donna A. Godbey 159 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Smilax glauca Walter, W.W. Overbeck 979 (EKY), Knobs, Uncommon, Xeric, Grassland. Collected on Jones Road growing with *Agalinis skinneriana*, *Liatris aspera*, *Schizachyrium scoparium*, *Sericocarpus linifolius*, *Danthonia spicata*, and *Orbexilium pedunculatum*. Also collected by R.L. Thompson 12-585 (BEREA) at Maywoods.

Smilax herbacea L., W.W. Overbeck 1182 (EKY), Dolomitic Foothills, Rare, Mesic, Woodland. Collected at Reynolds Prairie in Mesic Forest associated with the stream valley.

Smilax hispida Muhl. ex Torr., W.W. Overbeck 399 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve.

Smilax rotundifolia L., W.W. Overbeck 344, 417, 780, 1226 (EKY), Palisades, Knobs, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve and Maywoods.

Trilliaceae

Trillium flexipes Raf., W.W. Overbeck 1107 (EKY), Palisades, Rare, Mesic, Woodland. Collected at Sally Brown Preserve on the upper terrace of the Kentucky River.

Trillium sessile L., W.W. Overbeck 237, 403 (EKY), Palisades, Eden Hills, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve and Scott's Fork of Sugar Creek.

Typhaceae

Sparganium americanum Nutt., W.W. Overbeck 599 (EKY), Knobs, Uncommon, Aquatic. Collected at Maywoods in emergent lake margin.

Typha angustifolia L., R.L. Thompson 00-373 (BEREA), Palisades, Common, Aquatic. Collected at Camp Nelson Quarry.

Typha latifolia L., R.L. Thompson 03-861 (BEREA), Palisades, Common, Aquatic. Collected at Camp Nelson Quarry.

Uvulariaceae

Prosartes lanuginosa (Michx.) D. Don., Donna A. Godbey 112 (EKY), Knobs, Rare, Mesic, Woodland. Collected at Maywoods.

Uvularia perfoliata L., Donna A. Godbey 637 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Uvularia grandiflora Sm., Mary E. Wharton 9716 (KY), Palisades, Uncommon, Mesic, Woodland. Collected at White Oak Creek.

MAGNOLIOPHYTA: DICOTYLEDONAE (Dicots)

Acanthaceae

Justicia americana (L.) Vahl, W.W. Overbeck 820 (EKY), Outer Bluegrass, Uncommon, Aquatic. Collected in Paint Lick Creek at Highway 52. Also observed in the Dix River.

Ruellia caroliniensis (J.F. Gmel.) Steud., W.W. Overbeck 597, 741 (EKY), Palisades, Knobs, Uncommon, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve and Maywoods.

Ruellia humilis Nutt., W.W. Overbeck 723, 1498 (EKY), Palisades, Uncommon, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve in a Xeric Limestone Prairie remnant on a utility easement. Plant associates include *Silphium trifoliatum*, *Monarda fistulosa*, *Hedyotis nigricans*, *Opuntia humifusa*, and *Rosa carolina*. Also observed at Reynolds Prairie.

Ruellia strepens L., W.W. Overbeck 831 (EKY), Knobs, Common, Mesic, Woodland. Collected at Maywoods. Also collected at Maywoods by R.L. Thompson 12-581 (BEREA). Observed throughout Garrard County in disturbed limestone woods and ruderal mesic habitats.

Aceraceae

Acer negundo L., W.W. Overbeck 1582 (EKY), Palisades, Frequent, Mesic to Hydric, Woodland. Collected at Sally Brown Preserve on the floodplain of the Kentucky River. Also collected at Camp Nelson Quarry by R.L. Thompson 03-863 (BEREA).

Acer nigrum F. Michx., W.W. Overbeck 1183, 1630 (EKY), Dolomitic Foothills, Uncommon, Mesic, Woodland. Collected at Reynolds Prairie in Mesic Forest. Observed at Sally Brown Preserve and Tom Dorman State Nature Preserve and in the Eden Hills in Calcareous Mesophytic Forest.

Acer rubrum L., W.W. Overbeck 332 (EKY), Knobs, Common, Mesic to Hydric, Woodland. Collected at Maywoods along Fall Lick Creek. Observed in other wetland habitats across the county.

Acer saccharinum L., W.W. Overbeck 225 (EKY), Eden Hills, Common, Mesic to Hydric, Ruderal. Collected at the end of Ross Road and observed in the floodplain of the Kentucky River. Also observed in Garrard County widely planted as a yard tree and escaping to ruderal waysides.

Acer saccharum Marshall, W.W. Overbeck 832, 828 (EKY), Palisades, Common, Mesic, Woodland. Collected at Sally Brown Preserve. Observed in forests throughout the county.

Amaranthaceae

**Amaranthus hybridus* L., W.W. Overbeck 837 (EKY), Palisades, Uncommon, Mesic to Hydric, Woodland. Collected at Sally Brown Preserve in the floodplain of the Kentucky River.

**Amaranthus spinosus* L., W.W. Overbeck 544, 682, 823 (EKY), Palisades, Eden Hills, Outer Bluegrass, Common, Mesic, Ruderal. Collected along the Dix River, Jack Black Road, and Paint Lick Creek at Highway 52.

Iresine rhizomatosa Standl., W.W. Overbeck 941 (EKY), Palisades, Uncommon, Hydric, Woodland. Collected at Tom Dorman State Nature Preserve in the Kentucky River floodplain.

Anacardiaceae

Rhus aromatica Aiton, W.W. Overbeck 255, 1084, 1291 (EKY), Palisades, Eden Hills, Uncommon, Xeric, Woodland. Collected at Tom Dorman State Nature Preserve, Scott's Fork of Sugar Creek, and Highway 39 near the Kentucky River.

Rhus copallinum L., W.W. Overbeck 585 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Rhus glabra L., W.W. Overbeck 549 (EKY), Palisades, Common, Mesic, Woodland. Collected at Jack Black Road. Commonly grows on woodland edges. Also collected by R.L. Thompson 97-140 (BEREA) at Camp Nelson Quarry.

Rhus typhina L., W.W. Overbeck 925 (EKY), Palisades, Rare, Xeric, Grassland. Collected at Tom Dorman Nature Preserve from the entrance road in ruderal habitat. Also R.L. Thompson 00-371 (BEREA) at Camp Nelson Quarry.

Toxicodendron radicans (L.) Kuntze., R.L. Thompson 97-401 (BEREA), Palisades, Frequent, Mesic, Woodland. Collected at Camp Nelson Quarry. Observed ubiquitous in woodland.

Annonaceae

Asimina triloba (L.) Dunal, W.W. Overbeck 333, 1086 (EKY), Eden Hills, Knobs, Uncommon, Mesic, Woodland. Collected on Teaterville Road and at Maywoods. Also observed in Calcareous Mesophytic Forest in the Palisades of the Kentucky River and Mesic Forest throughout the county.

Apiaceae

Angelica venenosa (Greenway) Fernald, W.W. Overbeck 1665 (EKY), Knobs, Rare, Xeric, Grassland. Collected on Gabbard Road growing with *Orbexilium pedunculatum*, *Phlox maculata*, and *Rosa carolina*.

Chaerophyllum procumbens (L.) Crantz, W.W. Overbeck 373 (EKY), Palisades, Common, Mesic, Woodland. Collected at Sally Brown Preserve. Also, at Camp Nelson Quarry by R.L. Thompson 97-243 (BEREA).

Chaerophyllum tainturieri Hook., W.W. Overbeck 302, 1154 (EKY), Palisades, Flatwoods, Uncommon, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve and Ruritan Rotary Club picnic area on Harmon's Lick Road (Highway 3246). Also collected by R.L. Thompson 97-491 (BEREA) at Camp Nelson Quarry.

***Conium maculatum* L., Doty M. Mason with Jerry McQuerry 08 (EKY), Outer Bluegrass, Abundant, Mesic, Ruderal. Collected at McQuerry Farm near Paint Lick.

Cryptotaenia canadensis (L.) DC., Mary E. Wharton 9951, (KY), Palisades, Common, Mesic, Woodland. Rocky Fork. Observed in the Kentucky River and Dix River vicinity.

***Daucus carota* L., R.L. Thompson 96-603 (BEREA), Palisades, Frequent, Mesic to Xeric, Ruderal. Collected at Camp Nelson Quarry. Also collected at Maywoods by Donna A. Godbey 320 (EKY).

Erigenia bulbosa (Michx.) Nutt., W.W. Overbeck 206 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve in Calcareous Mesophytic Forest.

Osmorhiza claytonii (Michx.) C.B. Clarke, Mary E. Wharton 9887 (KY), Palisades, Uncommon, Mesic, Woodland. Collected at White Oak Creek.

Osmorhiza longistylis (Torr.) DC., W.W. Overbeck 384 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve in Mesic Forest. Also Collected by R.L. Thompson 12-321 (BEREA) at Maywoods.

Oxypolis rigidior (L.) Raf., W.W. Overbeck 1685 (EKY), Knobs, Rare, Hydric, Woodland. Collected on Joe Damrell Road in a wet ditch.

***Pastinaca sativa* L., W.W. Overbeck 1320 (EKY), Dolomitic Foothills, Uncommon, Mesic, Grassland. Collected on Fall Lick Road between Hilltop Road and Drakes Creek Road growing with *Zizia aurea*. Also collected by R.L. Thompson 97-102 (BEREA) at Camp Nelson Quarry.

Sanicula canadensis L., W.W. Overbeck 445, 732, 1576 (EKY), Palisades, Knobs, Common, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve and Maywoods.

Sanicula odorata (Raf.) Pryer & Phillippe, W.W. Overbeck 406, 1192 (EKY), Palisades, Dolomitic Foothills, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve and Reynolds Prairie in Mesic Forest. Also collected by R.L. Thompson 12-606 (BEREA) at Maywoods.

Taenidia integerrima (L.) Drude, Donna A. Godbey 54 (EKY), Knobs, Rare, Xeric to Mesic, Woodland. Collected at Maywoods.

Thaspium barbinode (Michx.) Nutt., Mary E. Wharton 9885 (KY), Palisades, Uncommon, Mesic, Woodland. Collected at White Oak Creek.

Thaspium chapmanii (Coult. & Rose) Small, W.W. Overbeck 559 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Hamilton Valley Road (Highway 3246) between Lamb Black Road (County Road 1058) and Dripping Springs Road at the Lincoln County line.

Thaspium trifoliatum (L.) A. Gray, W.W. Overbeck 1208, 1508 (EKY), Dolomitic Foothills, Uncommon, Mesic, Woodland. Collected at Reynolds Prairie in floodplain of creek in Mesic Forest. Also collected by Donna A. Godbey 165 (EKY) and R.L. Thompson 12-319 (BEREA) at Maywoods.

Zizia aptera (A.Gray) Fernald, W.W. Overbeck 489, 1304, 1429 (EKY), Palisades, Knobs, Rare, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve in Sub-xeric Forest on limestone slopes above White Oak Creek near the Kentucky River and on Gabbard Road between Jones Road and Deer Valley Road.

Zizia aurea (L.) W.D.J. Koch, W.W. Overbeck 1171 (EKY), Dolomitic Foothills, Rare, Mesic, Grassland. Collected on Fall Lick Road between Hilltop Road and Drakes Creek Road.

Apocynaceae

Apocynum cannabinum L., W.W. Overbeck 480, 745 (EKY), Palisades, Knobs, Common, Mesic, Grassland. Collected at Tom Dorman State Nature Preserve and Jones Road. Also collected at Maywoods by Donna A. Godbey 459 (EKY) and R.L. Thompson 97-133 (BEREA) at Camp Nelson Quarry.

***Vinca minor* L., W.W. Overbeck 250 (EKY), Palisades, Uncommon, Mesic, Ruderal. Collected at Tom Dorman State Nature Preserve on White Oak Creek upstream from Rogers Road (Highway 1845). Also collected by Mary E. Wharton 9705 (KY) at White Oak Creek.

Aquifoliaceae

Ilex opaca Aiton, W.W. Overbeck 1511 (EKY), Dolomitic Foothills, Uncommon, Mesic, Woodland. Collected at Reynolds Prairie in an Oak-Hickory Forest growing with *Juniperus virginiana* and *Sassafras albidum*.

Araliaceae

***Hedera helix* L., W.W. Overbeck 890a (EKY), Palisades, Uncommon, Mesic, Ruderal. Collected below the Kennedy Bridge (Highway 152) at Herrington Lake.

!*Panax quinquefolium* L., Donna A. Godbey 241 (EKY), Knobs, Rare, Mesic, Woodland. Collected at Maywoods. Reported for Sally Brown Preserve and Tom Dorman State Nature Preserve but these reports remain unverified. Rare due to over-collection for commercial sale.

Aristolochiaceae

Aristolochia serpentaria L., W.W. Overbeck 1624 (EKY), Eden Hills, Rare, Mesic, Woodland. Collected on Braudus Branch Road in Calcareous Mesophytic Forest growing with *Fagus grandifolia*, *Liriodendron tulipifera*, *Quercus shumardii*, *Acer nigrum*, *Fraxinus americana*, *Aesculus flava*, *Epifagus virginiana*, *Phlox divaricata*, *Hydrophyllum macrophylla*, *Tipularia discolor*, and *Trillium flexipes*.

Asarum canadense L., W.W. Overbeck 185, 222 (EKY), Palisades, Eden Hills, Uncommon, Mesic to Hydric, Woodland. Collected along the Dix River at Highway 52 and along Paint Lick Creek at Highway 1295.

Asclepiadaceae

Ampelamus albidus (Nutt.) Britton, W.W. Overbeck 813 (EKY), Outer Bluegrass, Frequent, Mesic, Ruderal. Collected in the town of Paint Lick growing on fencerows with *Lathyrus latifolia*. Observed throughout the county in disturbed areas.

Asclepias amplexicaulis Sm., W.W. Overbeck 496, 1303 (EKY), Knobs, Rare, Xeric, Grassland. Collected on Gabbard Road between Jones Road and Deer Valley Road growing with *Asclepias tuberosa*, *Zizia aptera*, and *Rosa carolina*.

Asclepias incarnata L., R.L. Thompson 03-868 (BEREA), Palisades, Uncommon, Hydric, Grassland. Collected at Camp Nelson Quarry. Also collected at Maywoods by Donna A. Godbey 412 (EKY).

Asclepias purpurascens L., W.W. Overbeck 529, 1687 (EKY), Dolomitic Foothills, Knobs, Rare, Mesic, Woodland. Collected on Narrow Gap Road growing with *Rosa setigera*, *Pedicularis canadensis*, and *Phlox glaberimma*.

Asclepias quadrifolia Jacq., W.W. Overbeck 1688 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods on ridgetops. Also collected by Mary E. Wharton 9964 (KY) at White Oak Creek.

Asclepias syriaca L., R.L. Thompson 03-846 (BEREA), Palisades, Common, Mesic, Ruderal. Collected at Camp Nelson Quarry.

Asclepias tuberosa L., W.W. Overbeck 1668, Knobs, (EKY), Uncommon, Xeric, Grassland. Collected on Gabbard Road.

Asclepias verticillata L., W.W. Overbeck 727, 1389 (EKY), Palisades, Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve and on Harmon's Lick Road. Observed at Reynolds Prairie.

Asclepias viridiflora Raf., W.W. Overbeck 1312 (EKY), Dolomitic Foothills, Rare, Xeric, Grassland. Collected at Reynolds Prairie.

Asclepias viridis Walter, W.W. Overbeck 502 (EKY), Outer Bluegrass, Common, Mesic, Ruderal. Collected on Highway 52 near Highway 1295. Also collected by R.L. Thompson 12-583 (BEREA) at Maywoods.

Matelea obliqua (Jacq.) Woodson, W.W. Overbeck 711, 936, 1629 (EKY), Palisades, Eden Hills, Uncommon, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve, Kings Mill Boat Launch and Broadus Branch.

Asteraceae

**Achillea millefolium* L., W.W. Overbeck 447 (EKY), Dolomitic Foothills, Common, Mesic, Ruderal. Collected at Reynolds Prairie in a low field used for food plots. Also collected by Donna A. Godbey 143 (EKY) at Maywoods and R.L. Thompson 97-101 (BEREA) at Camp Nelson Quarry.

Ageratina altissima (L.) R.M. King & H. Rob., R.L. Thompson 96-608 (BEREA), Palisades, Common, Mesic, Woodland. Collected at Camp Nelson Quarry. Observed across the county in Mesic Forest.

Ambrosia artemisifolia L., Donna A. Godbey 509 (EKY), Knobs, Frequent, Mesic to Xeric, Ruderal. Collected at Maywoods. Also, at Camp Nelson Quarry by R.L. Thompson 00-559 (BEREA).

Ambrosia trifida L., R.L. Thompson 00-552 (BEREA), Palisades, Common, Mesic to Hydric, Ruderal. Collected at Camp Nelson Quarry. Observed commonly on floodplains and open soil.

**Amphiachyris dracunculoides* (DC.) Nutt., W.W. Overbeck 1441 (EKY), Knobs, Uncommon, Xeric, Ruderal. Collected on Dave Eden Road in a clear cut.

Antennaria solitaria Rydb., Chris Stefanov 22 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Antennaria plantaginifolia (L.) Richards., W.W. Overbeck 441, 1070, 1161 (EKY), Palisades, Dolomitic Foothills, Knobs, Uncommon, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve, Brock Road, and Maywoods.

***Arctium minus* Bernh., Donna A. Godbey 427 (EKY), Knobs, Uncommon, Mesic, Ruderal. Collected at Maywoods.

Arnoglossum atriplicifolium (L.) H.E. Rob., W.W. Overbeck 628, 1377 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected on Hamilton Valley Road southwest of Maywoods Road and Dripping Springs Road near Ramsey Cemetary Road.

**Artemisia annua* L., R.L. Thompson 00-735 (BEREA), Palisades, Uncommon, Mesic to Xeric, Ruderal. Collected at Camp Nelson Quarry.

**Artemisia vulgaris* L., R.L. Thompson 03-864 (BEREA), Palisades, Uncommon, Mesic to Hydric. Collected at Camp Nelson Quarry.

Astranthium integrifolium (Michx.) Nutt., W.W. Overbeck 558, 1162, 1278 (EKY), Dolomitic Hills, Knobs, Uncommon, Mesic, Grassland. Collected on Brock Road, Drakes Creek Road, and Maywoods. Observed at Reynolds Prairie. Collected at Maywoods too by R.L. Thompson 12-338 (BEREA).

Bidens bipinnata L., W.W. Overbeck 624 (EKY), Knobs, Uncommon, Hydric, Grassland. Collected on Hamilton Valley Road on a farm pond margin North of Maywoods Road. Also collected at Camp Nelson Quarry by R.L. Thompson 00-536 (BEREA).

Bidens cernua L., Elizabeth M. Browne and Edward T. Browne, Jr. 6522 (EKY), Palisades, Uncommon, Hydric, Woodland. Collected at White Oak Creek.

Bidens comosa (A. Gray) Wieg., R.L. Thompson 00-733 (BEREA), Palisades, Uncommon, Hydric, Ruderal. Collected at Camp Nelson Quarry.

Bidens frondosa L., W.W. Overbeck 884 (EKY), Knobs, Common, Hydric, Woodland. Collected at Maywoods on lake margin. Also collected by R.L. Thompson 00-732 (BEREA) at Camp Nelson Quarry.

Bidens polylepis S.F. Blake, W.W. Overbeck 818, 883 (EKY), Outer Bluegrass, Knobs, Common, Hydric, Grassland. Collected at Maywoods in wetland depressions and on lake margins.

Brickellia eupatoroides (L.) Shinners., Mary Wharton 9502 (EKY), Palisades, Uncommon, Xeric to Mesic, Ruderal. Collected at White Oak Creek.

***Carduus nutans* L., R.L. Thompson 00-364 (BEREA), Palisades, Uncommon, Mesic to Xeric, Ruderal. Collected at Camp Nelson Quarry.

***Centaurea maculosa* Lam., W.W. Overbeck 613 (EKY), Knobs, Uncommon, Xeric, Ruderal. Collected on Calico Road in roadside gravel.

***Chrysanthemum leucanthemum* L., R.L. Thompson 97-428 (BEREA), Palisades, Frequent, Mesic to Xeric, Ruderal. Collected at Camp Nelson Quarry.

Chrysopsis mariana (L.) Elliott, W.W. Overbeck 981 (EKY), Knobs, Uncommon, Xeric, Grassland. Collected at the end of Jones Road.

***Cichorium intybus* L., R.L. Thompson 00-343 (BEREA), Palisades, Abundant, Mesic to Xeric, Ruderal. Collected at Camp Nelson Quarry. Observed in fields across the Garrard County.

Cirsium carolinianum (Walter) Fernald & B.G. Schub., W.W. Overbeck 488, 1283 (EKY), Knobs, Rare, Xeric, Woodland. Collected at Maywoods and on Gabbard Road.

Cirsium discolor (Muhl. ex Willd.) Spreng., W.W. Overbeck 909 (EKY), Dolomitic Foothills, Uncommon, Mesic to Xeric, Woodland. Collected on Old Richmond Road and observed throughout the county in various habitats.

***Cirsium vulgare* (Savi) Ten., W.W. Overbeck 903 (EKY), Dolomitic Foothills, Uncommon, Mesic, Ruderal. Collected at Reynolds Prairie on a mowed grassland growing with *Juniperus virginiana*.

Conoclinium coelestinum (L.) DC., W.W. Overbeck 893 (EKY), Eden Hills, Common, Mesic, Grassland. Collected on Braudus Branch Road in mowed roadside.

Conyza canadensis (L.) Cronquist, R.L. Thompson 00-533 (BEREA), Palisades, Common, Mesic, Ruderal. Collected at Camp Nelson Quarry.

Coreopsis auriculata L., W.W. Overbeck 436 (EKY), Knobs, Uncommon, Xeric, Grassland. Collected at Maywoods.

Coreopsis lanceolata L., W.W. Overbeck 1690 (EKY), Dolomitic Foothills, Rare, Xeric, Grassland. Documented by photo voucher at Reynolds Prairie.

Coreopsis major Walter, W.W. Overbeck 485 (EKY), Knobs, Common, Xeric, Grassland. Collected on Jones Road.

Coreopsis tripteris L., W.W. Overbeck 1352 (EKY), Knobs, Uncommon, Mesic, Grassland. Collected on Hamilton Valley Road.

**Crepis pulchra* L., W.W. Overbeck 1168 (EKY), Knobs, Uncommon, Mesic, Ruderal. Collected on Narrow Gap Road on an eroding roadside. Also collected at Camp Nelson Quarry by R.L. Thompson 97-418 (BEREA).

Doellingeria infirma (Michx.) Greene, W.W. Overbeck 649 (EKY), Knobs, Uncommon, Mesic to Xeric, Woodland. Collected at Maywoods.

Echinacea pallida (Nutt.) Nutt., R.L. Thompson 12-601 (BEREA), Knobs, Rare, Mesic to Xeric, Grassland. Collected at Maywoods in a planted prairie.

Eclipta prostrata (L.) L., W.W. Overbeck 679 (EKY), Palisades, Uncommon, Hydric, Woodland. Collected on the banks of the Dix River.

Elephantopus carolinianus Raeusch., W.W. Overbeck 754, 827 (EKY), Palisades, Common, Mesic, Woodland. Collected at Sally Brown Preserve and Tom Dorman State Nature Preserve.

Erechtites hieraciifolia (L.) Raf., W.W. Overbeck 769 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods. Also collected at Camp Nelson Quarry by R.L. Thompson 00-743 (BEREA).

Erigeron annuus (L.) Pers., R.L. Thompson 97-404, 97-463 (BEREA), Palisades, Common, Mesic, Ruderal. Collected at Camp Nelson Quarry.

Erigeron philadelphicus L., W.W. Overbeck 378 (EKY), Palisades, Frequent, Mesic, Woodland. Collected at Sally Brown Preserve.

Erigeron pulchellus Michx., W.W. Overbeck 1186 (EKY), Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected at Reynolds Prairie.

Erigeron strigosus Muhl. ex Willd., W.W. Overbeck 478 (EKY), Knobs, Uncommon, Xeric, Grassland. Collected at the end of Jones Road.

Eupatorium altissimum L., W.W. Overbeck 897, 914 (EKY), Dolomitic Foothills, Uncommon, Mesic to Xeric, Grassland. Collected at the junction of Old Richmond Road with Highway 1972.

Eupatorium fistulosum Barratt, W.W. Overbeck 888, 916, 1591 (EKY), Palisades, Knobs, Common, Mesic to Hydric, Grassland. Collected at Sally Brown Preserve, Brock Road, and Maywoods.

Eupatorium hyssopifolium L., R.L. Thompson 03-849 (BEREA), Palisades, Common, Xeric, Ruderal. Collected at Camp Nelson Quarry.

Eupatorium perfoliatum L., W.W. Overbeck, 1730 (EKY), Palisades, Common, Hydric, Grassland. Photo voucher on the Dix River near Highway 52.

Eupatorium purpureum L., W.W. Overbeck 630 (EKY), Knobs, Rare, Mesic, Woodland. Collected southwest of Maywoods Road on Hamilton Valley Road.

Eupatorium serotinum Michx., W.W. Overbeck 764, 997 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods and on Calico Road at a tributary of Copper Creek.

Eupatorium sessilifolium L., W.W. Overbeck 1422 (EKY), Palisades, Uncommon, Xeric, Grassland. Collected at Tom Dorman State Nature Preserves along the utility easement.

Eurybia divaricata (L.) G.L. Nesom, W.W. Overbeck 724 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve on North facing bluffs above the Kentucky River. Also observed commonly at Maywoods growing in Mesic Forest.

Eurybia macrophylla (L.) Cass., W.W. Overbeck 790 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods in Mesic Forest.

Eurybia surculosa (Michx.) G.L. Nesom, W.W. Overbeck 1442 (EKY), Knobs, Uncommon, Xeric, Grassland. Collected at Maywoods.

Euthamia graminifolia (L.) Nutt., W.W. Overbeck 870, 999 (EKY), Knobs, Uncommon, Mesic, Grassland. Collected on Calico Road on a tributary of Copper Creek and at Maywoods.

Fleischmannia incarnata (Walter) King & H.E. Rob., W.W. Overbeck 1494 (EKY), Palisades, Rare, Mesic to Xeric, Woodland. Collected at Tom Dorman State Nature Preserve in Mesic Forest and on limestone outcrops associated with Sub-xeric Forest near the utility easement.

**Galinsoga quadriradiata* Cav., W.W. Overbeck 691, 879 (EKY), Palisades, Knobs, Uncommon, Mesic, Ruderal. Collected on the Dix River at Highway 52 and at Maywoods.

Gamochaeta purpurea (L.) Cabrera, Donna A. Godbey 154 (EKY), Knobs, Uncommon, Xeric, Grassland. Collected at Maywoods.

Helenium autumnale L., W.W. Overbeck 1510 (EKY), Dolomitic Foothills, Uncommon, Hydric, Woodland. Collected at Reynolds Prairie growing in streamside cobble bars. Also collected by R.L. Thompson 00-507 (BEREA) at Camp Nelson Quarry.

Helianthus angustifolius L., W.W. Overbeck 926 (EKY), Knobs, Rare, Mesic, Grassland. Collected on Harmon's Lick Road.

Helianthus atrorubens L., W.W. Overbeck 1666, 1678 (EKY), Knobs, Rare, Xeric, Grassland. Collected on Joe Damrell Road in a clear cut roadside within a Mesic Forest.

Helianthus divaricatus L., W.W. Overbeck 1731 (EKY), Dolomitic Foothills, Uncommon, Grassland. Documented by photo voucher at the southeastern corner of Highway 1972 and Lane Road.

Helianthus grosseserratus M. Martens, W.W. Overbeck 859, 929, 1603, 1604 (EKY), Outer Bluegrass, Dolomitic Foothills, Rare, Hydric, Grassland. Collected on Cartersville Road (Highway 954) near the corner of Dave Eden Road growing in a marshy pasture behind an abandoned house. Also collected on a disturbed roadside of Highway 1295 at Eads Way.

Helianthus hirsutus Raf., W.W. Overbeck 614, 749, 1396, 1440, 1483, 1672, 1682 (EKY), Palisades, Dolomitic Foothills, Knobs, Common, Mesic to Xeric, Grassland. Collected at Tom Dorman, Narrow Gap Road, Joe Damrell Road., Harmon's Lick, Hamilton Valley Road between Harmon's Lick Road and Narrow Gap Road, Dave Eden Road, and Brock Road. Commonly observed on fence rows.

Helianthus maximiliani Schrad., W.W. Overbeck 917 (EKY), Dolomitic Foothills, Uncommon, Mesic, Grassland. Collected on Brock Road.

Helianthus microcephalus Torr. & A. Gray, W.W. Overbeck 667, 750, 781, 896, 1418, 1502 (EKY), Palisades, Dolomitic Foothills, Knobs, Uncommon, Mesic to Xeric, Woodland. Collected at Tom Dorman State Nature Preserve, Old Richmond Road North of Good Hope Church Road and Lane Road, and at Maywoods.

Helianthus strumosus L., W.W. Overbeck 960, 1386, 1471, 1680 (EKY), Dolomitic Foothills, Knobs, Rare, Woodland. Collected at Reynolds Prairie, Joe Damrell Road, and at Maywoods.

Heliopsis helianthoides (L.) Sweet, W.W. Overbeck 922, 1472 (EKY), Dolomitic Foothills, Knobs, Rare, Grassland. Collected at Reynolds Prairie growing with *Onosmodium hispidissimum*, *Monarda fistulosa*, and *Dichanthelium clandestinum*. Also collected at Maywoods.

Hieracium gronovii L., W.W. Overbeck 650, 1684 (EKY), Knobs, Rare, Xeric, Woodland. Collected on Joe Damrell Road and at Maywoods.

Hieracium venosum L., W.W. Overbeck 419, 421 (EKY), Knobs, Uncommon, Xeric, Woodland. Collected at Maywoods.

Iva annua L., W.W. Overbeck 1669 (EKY), Flatwoods, Uncommon, Hydric, Grassland. Collected on Good Hope Road at the junction with Highway 1972.

Krigia dandelion (L.) Nutt., W.W. Overbeck 1732 (EKY), Knobs, Rare, Mesic to Xeric, Woodland. Documented by photo voucher at Maywoods growing with *Silene virginica*, *Tradescantia virginiana*, and *Danthonia spicata*.

Krigia biflora (Walter) S.F. Blake, W.W. Overbeck 418 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Lactuca canadensis L., W.W. Overbeck 705, 1375 (EKY), Palisades, Knobs, Uncommon, Mesic, Ruderal. Collected at Kings Mill Road boat launch and Narrow Gap Road.

Lactuca floridana (L.) Gaertn., W.W. Overbeck 719 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve.

**Lactuca saligna* L., R.L. Thompson 00-347 (BEREA), Palisades, Uncommon, Xeric, Ruderal. Collected at Camp Nelson Quarry.

**Lactuca serriola* L., W.W. Overbeck 626 (EKY), Knobs, Uncommon, Mesic, Ruderal. Collected on Hamilton Valley Road and by R.L. Thompson 00-368 (BEREA) at Camp Nelson Quarry.

Liatris aspera Michx., W.W. Overbeck 1569 (EKY), Knobs, Rare, Xeric, Grassland. Collected at the end of Jones Road.

Liatris squarrosa (L.) Michx., W.W. Overbeck 1332, 1388 (EKY), Dolomitic Foothills, Rare, Grassland. Collected on Harmon's Lick Road.

**Matricaria discoidea* DC., R.L. Thompson 12-332 (BEREA), Knobs, Uncommon, Xeric, Ruderal. Collected at Maywoods.

Oligoneuron rigidum Small, W.W. Overbeck 1739 (EKY), Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected in a Xeric Limestone Prairie on Old Richmond Road growing with *Ratibida pinnata*, *Guara filipes*, *Eragrostis spectabilis*, *Manfreda virginica*, and *Bouteloua curtipendula*.

Packera anonyma (Alph. Wood) W.A. Weber & Á. Löve, W.W. Overbeck 435 (EKY), Knobs, Common, Xeric, Grassland. Collected at Maywoods. Also collected by Donna A. Godbey 659 (EKY) at Maywoods,

Packera aurea (L.) Á. Löve & D. Löve, W.W. Overbeck 320 (EKY), Eden Hills, Common, Mesic, Woodland. Collected on Scott's Fork of Sugar Creek. Also collected at Maywoods by Donna A. Godbey 194 (EKY).

Packera glabella (Poir) C. Jeffrey, R.L. Thompson 12-341 (BEREA), Palisades, Common, Mesic, Ruderal. Collected at Maywoods.

Packera obovata (Muhl. ex Willd.) W.A. Weber & Á. Löve, W.W. Overbeck 205, 227, 1096 (EKY), Palisades, Eden Hills, Outer Bluegrass, Common, Mesic, Woodland. Collected on Back Creek Road near Highway 1295, on Paint Lick Creek at Highway 1295, and at Sally Brown Preserve.

Polymnia canadensis L., W.W. Overbeck 392 (EKY), Palisades, Abundant, Mesic, Woodland. Collected in Mesic Forest at Sally Brown Preserve. Also, collected at Camp Nelson Quarry by R.L. Thompson 97-487 (BEREA).

Prenanthes altissima L., W.W. Overbeck 975, 1614 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

! *Prenanthes crepidinea* Michx., W.W. Overbeck 1275, 1385 (EKY), Eden Hills, Rare, Mesic to Hydric, Woodland. Collected on Sad Road growing with *Ambrosia trifida*, *Verbesina alternifolia*, and *Platanus occidentalis*. Also observed along Scott's Fork of Sugar Creek.

Prenanthes serpentaria Pursh, W.W. Overbeck 990 (EKY), Knobs, Uncommon, Xeric, Grassland. Collected on Jones Road.

Pseudognaphalium obtusifolium (L.) Hilliard & Burt., W.W. Overbeck 873 (EKY), Knobs, Uncommon, Xeric, Woodland. Collected at Maywoods.

Pyrrhopappus carolinianus (Walter) DC., W.W. Overbeck 920 (EKY), Dolomitic Foothills, Uncommon, Mesic, Grassland. Collected at Reynolds Prairie in low fields near the stream.

Ratibida pinnata (Vent.) Barnh., W.W. Overbeck 637 (EKY), Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected at Reynolds Prairie.

Rudbeckia fulgida Aiton, W.W. Overbeck 550, 742, 747, 755, 930 (EKY), Palisades, Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve and Reynolds Prairie.

Rudbeckia hirta L., W.W. Overbeck 531, 555, 1299, 1305 (EKY), Palisades, Dolomitic Foothills, Knobs, Uncommon, Xeric, Ruderal.

Rudbeckia triloba L., W.W. Overbeck 573, 704 (EKY), Palisades, Knobs, Common, Mesic, Woodland. Collected at Kings Mill Boat Launch and Maywoods. Observed commonly growing on roadsides, fields, and disturbed woods across the county.

Sericocarpus asteroides (L.) BSP., W.W. Overbeck 1322 (EKY), Knobs, Uncommon, Xeric, Woodland. Collected off of Dave Eden Road in a clear cut.

Sericocarpus linifolius (L.) BSP., W.W. Overbeck 1301 (EKY), Knobs, Rare, Xeric, Grassland. Collected on Jones Road.

Silphium perfoliatum L., W.W. Overbeck 1367, 1595 (EKY), Palisades, Outer Bluegrass, Uncommon, Hydric, Woodland. Collected at Sally Brown Preserve and White Lick Creek near Highway 52.

!*Silphium pinnatifidum* Elliott, W.W. Overbeck 1400 (EKY), Knobs, Rare, Mesic, Grassland. Collected at Maywoods in a planted prairie.

Silphium terebinthinaceum Jacq., W.W. Overbeck 1505 (EKY), Dolomitic Foothills, Rare, Xeric, Grassland. Collected at Reynolds Prairie.

Silphium trifoliatum L., W.W. Overbeck 632, 748 (EKY), Palisades, Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected at Reynolds Prairie and Tom Dorman State Nature Preserve.

Smallanthus uvedalius (L.) Mack., W.W. Overbeck 1735 (EKY), Dolomitic Foothills, Mesic to Hydric, Forest. Collected along Drakes Creek on Drakes Creek Road near Harmon's Lick Road.

Solidago arguta Aiton, W.W. Overbeck 786, (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Solidago bicolor L., W.W. Overbeck 991, (EKY), Knobs, Uncommon, Xeric, Woodland. Collected at Maywoods.

Solidago caesia L., W.W. Overbeck 935, (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve. Also observed at Maywoods.

Solidago canadensis L., W.W. Overbeck 1001, (EKY), Knobs, Abundant, Mesic, Ruderal. Collected on Calico Road and observed throughout the county.

Solidago flexicaulis L., W.W. Overbeck 1592, (EKY), Palisades, Uncommon, Mesic to Hydric, Woodland. Collected at Sally Brown Preserve.

Solidago gigantea Aiton, W.W. Overbeck 772, 826, 953, 994, 1408 (EKY), Palisades, Outer Bluegrass, Knobs, Uncommon, Mesic to Hydric, Woodland. Collected at Sally Brown Preserve, on Paint Lick Creek at Highway 52, on Calico Road on a tributary of Copper Creek, and at Maywoods along Fall Lick Creek.

Solidago juncea Aiton, W.W. Overbeck 612, 989 (EKY), Knobs, Rare, Xeric, Grassland. Collected at the end of Jones Road.

Solidago nemoralis Aiton, R.L. Thompson 03-880 (BEREA), Palisades, Uncommon, Xeric Ruderal. Collected at Camp Nelson Quarry. Also observed at Maywoods.

Solidago sphacelata Raf., W.W. Overbeck 782, 1328 (EKY), Knobs, Uncommon, Xeric, Woodland. Collected at off Dave Eden Road in a clear cut and at Maywoods.

Solidago ulmifolia Muhl. ex Willd., W.W. Overbeck 1419 (EKY), Palisades, Uncommon, Xeric, Woodland. Collected at Tom Dorman State Nature Preserve.

**Sonchus asper* (L.) Hill, W.W. Overbeck 1177, (EKY), Outer Bluegrass, Uncommon, Mesic, Ruderal. Collected on Wallacetown Road on a disturbed roadside. Collected by R.L. Thompson 00-544 (BEREA) at Camp Nelson Quarry too.

Symphyotrichum cordifolium (L.) G.L. Nesom, W.W. Overbeck 976, 978 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Symphyotrichum dumosum (L.) G.L. Nesom, W.W. Overbeck 927, 1488, 1575 (EKY), Palisades, Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve and on Harmon's Lick Road.

Symphyotrichum lanceolatum (Willd.) G.L. Nesom, W.W. Overbeck 948, 1587 (EKY), Palisades, Outer Bluegrass, Uncommon, Hydric, Woodland. Collected at Sally Brown Preserve on the floodplain of the Kentucky River and along Paint Lick Creek at Highway 52.

Symphyotrichum lateriflorum (L.) Á. & D. Löve, W.W. Overbeck 977, 1586, 1632 (EKY), Dolomitic foothills, Knobs, Common, Woodland. Collected at Reynolds Prairie and Sally Brown Preserve near stream corridors.

Symphyotrichum novae-angliae (L.) G.L. Nesom, R.L. Thompson 00-745 (BEREA), Palisades, Uncommon, Xeric, at Camp Nelson Quarry.

Symphyotrichum oblongifolium (Nutt.) G.L. Nesom, W.W. Overbeck 1733 (EKY) Palisades, Uncommon, Xeric, Grassland. Documented by photo voucher at Tom Dorman State Nature Preserve on limestone cliffs.

Symphyotrichum ontarione (Wieg.) G.L. Nesom, Mary Wharton 9580, 9581 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at White Oak Creek.

Symphyotrichum patens (Aiton) G.L. Nesom, W.W. Overbeck 938, 988 (EKY), Palisades, Knobs, Uncommon, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve and at the end of Jones Road.

Symphyotrichum pilosum (Willd.) G.L. Nesom var. *pilosum*, W.W. Overbeck 857, 998, 1438 (EKY), Knobs, Common, Mesic, Ruderal. Collected on Dave Eden Road and on Calico Road.

Symphyotrichum pilosum (Willd.) G.L. Nesom var. *pringlei* (Gray) G.L. Nesom, W.W. Overbeck 902 (EKY), Dolomitic Foothills, Rare, Xeric, Grassland. Collected at Reynolds Prairie.

Symphyotrichum prenanthoides (Muhl. ex Willd.) G.L. Nesom, W.W. Overbeck 919, 1676 (EKY), Dolomitic Foothills, Uncommon, Hydric, Woodland. Collected at Reynolds Prairie along the stream growing with *Lycopus virginicus*.

Symphyotrichum racemosum (Elliott) G.L. Nesom, W.W. Overbeck 993 (EKY), Knobs, Uncommon, Hydric, Woodland. Collected on Calico Road.

Symphyotrichum undulatum (L.) G.L. Nesom, W.W. Overbeck 984, 992 (EKY), Knobs, Uncommon, Xeric, Grassland. Collected at the end of Jones Road and on Calico Road.

**Taraxacum officinale* (L.) Weber, W.W. Overbeck 191 (EKY), Palisades, Frequent, Mesic, Ruderal. Collected on Paper Mill Road at an old quarry. Also collected by Donna A. Godbey 622 (EKY) at Maywoods and at Camp Nelson Quarry by R.L. Thompson 97-425 (BEREA).

**Tragopogon dubius* Scop., R.L. Thompson 04-1111 (BEREA), Palisades, Uncommon, Xeric, Ruderal, collected at Camp Nelson Quarry.

Verbesina alternifolia (L.) Britton ex Kearney, W.W. Overbeck 807 (EKY), Outer Bluegrass, Common, Mesic to Hydric, Woodland. Collected along Paint Lick Creek at Highway 52.

Verbesina occidentalis (L.) Walter, W.W. Overbeck 875 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Verbesina virginica L., W.W. Overbeck 743, 1599 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve and Sally Brown Preserve.

Vernonia gigantea (Walter) Trel., W.W. Overbeck 1405, 1415 (EKY), Knobs, Abundant, Mesic to Hydric, Grassland. Collected at Maywoods. Also observed throughout the county.

Xanthium strumarium L., Mary E. Wharton 9484 (EKY), Palisades, Uncommon, Mesic to Hydric, Ruderal. Collected at White Oak Creek. Collected by R.L. Thompson 00-740 (BEREA) at Camp Nelson Quarry.

Balsaminaceae

Impatiens capensis Meerb., W.W. Overbeck 548, 889b (EKY), Palisades, Eden Hills, Common, Hydric, Woodland. Collected at Highway 152 near the Kennedy Bridge and also at Jack Black Road. Also at Camp Nelson Quarry by R.L. Thompson 00-500 (BEREA)

Impatiens pallida Nutt., W.W. Overbeck 1583 (EKY), Palisades, Uncommon, Mesic to Hydric, Woodland. Collected at Sally Brown Preserve on the toe slope above the Kentucky River.

Berberidaceae

Jeffersonia diphylla (L.) Pers., W.W. Overbeck 1695 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve. Also Collected by R. Cranfill 2511 (KY) at Polly's Bend.

Podophyllum peltatum L., W.W. Overbeck 200, 394 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve.

Betulaceae

Alnus serrulata (Aiton) Willd., W.W. Overbeck 971, 974 (EKY), Knobs, Uncommon, Hydric, Woodland. Collected at Maywoods along Fall Lick Creek.

Betula nigra L., W.W. Overbeck 1362 (EKY), Knobs, Rare, Hydric, Woodland. Collected at Maywoods on the lake margin.

Carpinus caroliniana Walter, W.W. Overbeck 1253, 1547 (EKY), Palisades, Outer Bluegrass, Uncommon, Mesic to Hydric, Woodland. Collected along the Dix River and Lake Herrington and also at Highway 52 at Paint Lick Creek.

Corylus americana Walter, W.W. Overbeck 1459 (EKY), Knobs, Uncommon, Mesic to Hydric, Grassland. Collected on Narrow Gap Road in low fields near Hamilton Valley Road.

Ostrya virginiana (P. Mill.) K. Koch, W.W. Overbeck 1061, 1580 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected along the Dix River and Herrington Lake.

Bignoniaceae

Bignonia capreolata L., W.W. Overbeck 414 (EKY), Palisades, Common, Woodland. Collected at Sally Brown Preserve. Also collected by R.L. Thompson 97-144 (BEREA) at Camp Nelson Quarry.

Campsis radicans (L.) Seem. ex Bureau, R.L. Thompson 97-144(BEREA), Palisades, Uncommon, Mesic, Ruderal. Collected at Camp Nelson Quarry. Also collected at Maywoods by Donna A. Godbey 375 (EKY).

Catalpa speciosa Warder ex Engelm., W.W. Overbeck 1727 (EKY), Palisades, Uncommon, Mesic to Hydric, Woodland. Collected along Dix River near Highway 52.

Boraginaceae

***Buglossoides arvensis* (L.) I.M. Johnston, W.W. Overbeck 196, 1095 (EKY), Palisades, Outer Bluegrass, Uncommon, Mesic, Ruderal. Collected along Paint Lick Creek at Highway 1295 and at the Kings Mill Road boat launch along Herrington Lake.

Cynoglossum virginianum L., Donna A. Godbey 195 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

**Echium vulgare* L., Mary E. Wharton 9958 (KY), Palisades, Uncommon, Xeric, Ruderal. Collected at Rocky Fork.

Hackelia virginiana (L.) I.M. Johnston, Mary E. Wharton 10362 (KY), Palisades, Uncommon, Mesic, Woodland. Collected at White Oak Creek.

Lithospermum canescens (Michx.) Lehm., W.W. Overbeck 744, 1180 (EKY), Palisades, Dolomitic Foothills, Rare, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve and Reynolds Prairie.

Mertensia virginica (L.) Pers. ex Link, W.W. Overbeck 186, 192 (EKY), Palisades, Uncommon, Mesic to Hydric, Woodland. Collected along the Dix River and Herrington Lake.

Myosotis macrosperma Engelm., R.L. Thompson 97-440 (BEREA), Palisades, Common, Mesic to Xeric, Ruderal. Collected to Camp Nelson Quarry.

Myosotis verna Nutt., W.W. Overbeck 396, 1153 (EKY), Palisades, Knobs, Common, Mesic, Ruderal. Collected at Sally Brown Preserve and on Highway 3246 (Harmon's Lick Road).

! *Onosmodium hispidissimum* Mack., W.W. Overbeck 923, 1316 (EKY), Dolomitic Foothills, Rare, Mesic to Xeric, Grassland. Collected at Reynolds Prairie in a swale within a power line easement.

Brassicaceae

** *Alliaria petiolata* (M. Bieb.) Cavara & Grande, W.W. Overbeck 221, (EKY), Eden Hills, Uncommon, Mesic, Woodland. Collected along Paint Lick Creek at Highway 1295. Also collected by R.L. Thompson 97-252 (BEREA) at Camp Nelson Quarry.

Arabis laevigata (Muhl.) Poir., W.W. Overbeck 168, 251, 1637 (EKY), Palisades, Eden Hills, Dolomitic Foothills, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve, Long Branch Road and Reynolds Prairie.

** *Barbarea vulgaris* R. Br., W.W. Overbeck 215 (EKY), Eden Hills, Frequent, Mesic, Ruderal. Collected along Paint Lick Creek at Highway 1295. Observed across the county.

* *Brassica rapa* L., W.W. Overbeck 228, 1198 (EKY), Eden Hills, Outer Bluegrass, Abundant, Mesic, Ruderal. Collected on roadsides and fields on Back Creek Road and on Harmon's Lick Road (Highway 3246).

* *Capsella bursa-pastoris* (L.) Medik., Mary E. Wharton 10105 (KY), Palisades, Common, Mesic, Ruderal. Collected at White Oak Creek.

Cardamine douglassii (Torr.) Britton, W.W. Overbeck 180, 202, 1114 (EKY), Palisades, Eden Hills, Knobs, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve, Scott's Fork of Sugar Creek near Highway 563, and on Narrow Gap Road.

* *Cardamine hirsuta* L., W.W. Overbeck 188, 387, 1065 (EKY), Palisades, Frequent, Mesic, Ruderal. Collected at Tom Dorman State Nature Preserve at Sally Brown Preserve and on Paper Mill Road. Observed throughout Garrard County in disturbed habitats.

Cardamine pensylvanica Muhl. ex Willd., W.W. Overbeck 339, 1240 (EKY), Palisades, Knobs, Uncommon, Mesic to Hydric, Woodland. Collected at Sally Brown in a limestone spring and at Maywoods on a steep shale cliff above Fall Lick Creek.

Cardamine rhomboidea (Pers.) DC., W.W. Overbeck 1127 (EKY), Knobs, Rare, Hydric, Grassland. Collected on Narrow Gap Road just North of Hamilton Valley Road.

Dentaria diphylla Michx., Mary E. Wharton 9707 (KY), Palisades, Uncommon, Mesic, Woodland. Collected at White Oak Creek.

Dentaria heterophylla Nutt., W.W. Overbeck 165, 201, 249 (EKY), Palisades, Eden Hills, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve, Tom Dorman State Nature Preserve, and Long Branch Road.

Dentaria laciniata Muhl. ex Willd. W.W. Overbeck 165, 201, 249 (EKY), Palisades, Eden Hills, Common, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve, Sally Brown Preserve, and Long Branch Road.

Draba ramosissima Desv., W.W. Overbeck 1383 (EKY), Palisades, Rare, Xeric, Woodland. Collected at Sally Brown Preserve on a steep limestone cliff above the Kentucky River.

**Draba verna* L., W.W. Overbeck 194 (EKY), Palisades, Frequent, Mesic to Xeric, Ruderal. Collected at Kings Mill Road boat launch at Herrington Lake. Also collected at Camp Nelson Quarry by R.L. Thompson 00-50 (BEREA)

**Erysimum repandum* L., R.L. Thompson 09-56 (BEREA), Palisades, Rare, Xeric, Ruderal. Collected at Camp Nelson Quarry.

***Hesperis matronalis* L., W.W. Overbeck 1174 (EKY), Outer Bluegrass, Uncommon, Mesic, Ruderal. Collected on Highway 1972 growing in a disturbed roadside.

Iodanthus pinnatifidus (Michx.) Steud., W.W. Overbeck 455 (EKY), Dolomitic Foothills, Uncommon, Mesic, Woodland. Collected at the end of Hilltop Road in a wet ditch.

Leavenworthia uniflora (Michx.) Britton, W.W. Overbeck 1172, 1696 (EKY), Dolomitic Foothills, Rare, Xeric, Grassland. Collected at Reynolds Prairie on limestone bedrock and seasonally wet depressions.

**Lepidium campestre* (L.) R. Br., W.W. Overbeck 313 (EKY), Eden Hills, Uncommon, Mesic, Ruderal. Collected on Scott's Fork of Sugar Creek.

Lepidium virginicum L., W.W. Overbeck 1098, 1125 (EKY), Palisades, Knobs, Uncommon, Mesic, Ruderal. Collected at Sally Brown Preserve and Maywoods. Also collected at Camp Nelson Quarry R.L. Thompson 97-408 (BEREA).

**Lunaria annua* L., L. Scott Harp 31 (EKY), Palisades, Uncommon, Mesic, Ruderal. Collected at the end of Kings Mill Road near Herrington Lake.

Rorippa palustris (L.) Besser, W.W. Overbeck 1346 (EKY), Palisades, Uncommon, Hydric, Woodland. Collected at Tom Dorman State Nature Preserve in the floodplain of the Kentucky River.

**Sisymbrium officinale* L., W.W. Overbeck 1269 (EKY), Inner Bluegrass, Uncommon, Mesic, Ruderal. Collected on Highway 1355.

**Thlaspi arvense* L., L. Scott Harp 27 (EKY), Palisades, Common, Mesic, Ruderal. Collected at Bright Leaf Estates above Herrington Lake.

***Thlaspi alliaceum* L., W.W. Overbeck 216, 1091, 1355 (EKY), Eden Hills, Knobs, Common, Mesic, Ruderal. Collected on Paint Lick Creek on Highway 1295, Highway 563 near Highway 39, and Maywoods. Also, R.L. Thompson 07-47 (BEREA) south of Bryantsville along US 27 road shoulder.

***Thlaspi perfoliatum* L., W.W. Overbeck 190 (EKY), Palisades, Uncommon, Mesic, Ruderal. Collected on Papermill Road in an old quarry. Also, R.L. Thompson 00-39 (BEREA) at Camp Nelson Quarry

Buxaceae

Pachysandra procumbens Michx., John R. Keith s.n. (KY), Palisades, Rare, Mesic, Woodland. Collected on the Kentucky River at Camp Nelson.

Cactaceae

Opuntia humifusa (Raf.) Raf., W.W. Overbeck 1693 (EKY), Palisades, Rare, Xeric, Grassland. Documented by photo voucher at Tom Dorman State Nature Preserve on cliffs above the Kentucky River growing with *Hedyotis nigricans*, *Rosa carolina*, *Viola septemloba* subsp. *egglesonii*, and *Symphyotrichum oblongifolium*.

Campanulaceae

Campanulastrum americanum (L.) Small, W.W. Overbeck 581 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods. Also collected at Camp Nelson Quarry by R.L. Thompson 00-350(BEREA).

Lobelia cardinalis L., Donna A. Godbey 590 (EKY), Knobs, Uncommon, Hydric, Woodland. Collected at Maywoods. Also, R.L. Thompson 95-857 (BEREA) in ditch of paved Hamilton Valley Road SSW junction of Harmon's Lick Road.

Lobelia inflata L., Donna A. Godbey 422 (EKY), Knobs, Uncommon, Mesic to Xeric, Woodland. Collected at Maywoods. Also, R.L. Thompson 95-855 (BEREA) on disturbed gravel road shoulder at junction of Narrow Gap Rd. with Hamilton Valley Road.

Lobelia puberula Michx., Donna A. Godbey 502 (EKY), Knobs, Uncommon, Mesic to Hydric, Woodland. Collected at Maywoods.

Lobelia siphilitica L., R.L. Thompson 00-508, 03-869 (BEREA), Palisades, Common, Hydric, Grassland. Collected at Camp Nelson Quarry and 92-127 (BEREA) at White Creek Bridge on State Road 52.

Lobelia spicata Lam., W.W. Overbeck 484, 1310 (EKY), Dolomitic Foothills, Knobs, Uncommon, Xeric, Grassland. Collected at the end of Jones Road and at Reynolds Prairie.

Triodanis perfoliata (L.) Nieuwl., R.L. Thompson 12-311 (BEREA), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods. Also collected at Maywoods by Donna A. Godbey 273 (EKY).

Caprifoliaceae

Lonicera dioica L., W.W. Overbeck 1116 (EKY), Palisades, Rare, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve on a limestone outcrop over a tributary West of White Oak Creek.

***Lonicera fragrantissima* Lindl. & Paxton, W.W. Overbeck 937, 1069 (EKY), Palisades, Uncommon, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve within a utility easement on limestone cliffs above the Kentucky River.

***Lonicera japonica* Thunb., R.L. Thompson 96-607 (BEREA), Palisades, Abundant, Mesic, Woodland. Collected at Camp Nelson Quarry. Also collected at Maywoods by Donna A. Godbey 274 (EKY).

***Lonicera maackii* (Rupr.) Maxim., W.W. Overbeck 415, 876 (EKY), Palisades, Knobs, Abundant, Mesic, Woodland. Collected at Sally Brown Preserve and Maywoods. Also collected at Maywoods by R.L. Thompson 12-316 (BEREA).

!*Lonicera prolifera* (G. Kirchn.) Rehder, W.W. Overbeck 1219 (EKY), Dolomitic Foothills, Rare, Mesic, Woodland. Collected in Mesic Forest at Reynolds Prairie growing with *Viburnum rufidulum*, *Ostrya virginiana*, and *Ptelea trifoliata*.

***Lonicera standishii* Jacques, W.W. Overbeck 1233 (EKY), Palisades, Common, Mesic, Woodland. Collected at Sally Brown Preserve on steep limestone cliffs above the Kentucky River.

Sambucus canadensis L., Mary E. Wharton 10102 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at White Oak Creek. Also collected at Camp Nelson Quarry by R.L. Thompson 00-531 (BEREA).

Symphoricarpos orbiculatus Moench, W.W. Overbeck 648 (EKY), Dolomitic Foothills, Frequent, Mesic, Woodland. Collected at Reynolds Prairie and observed commonly throughout the county.

Triosteum angustifolium L., W.W. Overbeck 1185 (EKY), Dolomitic Foothills, Uncommon, Mesic, Woodland. Collected at Reynolds Prairie in a Mesic Forest. Also collected at Maywoods by R.L. Thompson 12-326 (BEREA).

Triosteum aurantiacum Bickn., Mary E. Wharton 10107 (EKY), Palisades, Rare, Mesic, Woodland. Collected at White Oak Creek.

Viburnum acerifolium L., W.W. Overbeck 598 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods. Also collected at Maywoods by R.L. Thompson 12-320 (BEREA).

Viburnum dentatum L., W.W. Overbeck 317 (EKY), Eden Hills, Rare, Mesic, Woodland. Collected on Scott's Fork of Sugar Creek in a Mesic Forest growing with *Quercus shumardii*, *Fraxinus americana*, *Acer saccharum*, *Prunus serotina*, *Aesculus glabra*, *Viburnum rufidulum*, *Cornus alternifolia*, and *Staphylea trifolia*.

!*Viburnum molle* Michx., Elizabeth M. Browne and Edward T. Browne, Jr., 6514 (EKY), Palisades, Rare, Mesic, Forest. Collected at White Oak Creek.

Viburnum prunifolium L., Mary E. Wharton, 9729 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at White Oak Creek. Also collected at Maywoods. W.W. Overbeck 336, 575 (EKY).

Viburnum rafinesquianum var. *affine* (Bush ex C.K.Schneid.) House, W.W. Overbeck 1234, 1420, 1501 (EKY), Palisades, Rare, Xeric, Woodland. Collected on cliffs above the Kentucky River at Tom Dorman State Nature Preserve and Sally Brown Preserve.

Viburnum rufidulum Raf., W.W. Overbeck 235 (EKY), Eden Hills, Uncommon, Mesic, Woodland. Collected on Scott's Fork of Sugar Creek.

Caryophyllaceae

***Arenaria serpyllifolia* L., R.L. Thompson 12-610 (BEREA), Knobs, Common, Xeric, Ruderal. Collected at Maywoods in gravel roadside near the entrance gate.

**Cerastium brachypetalum* Pers., W.W. Overbeck 301 (EKY), Eden Hills, Common, Mesic, Woodland. Collected on Scott's Fork of Sugar Creek.

**Cerastium glomeratum* Thuill., R.L. Thompson 12-337 (BEREA), Knobs, Common, Xeric, Ruderal. Collected at Maywoods.

Cerastium nutans Raf., R.L. Thompson 12-344 (BEREA), Knobs, Rare, Mesic, Ruderal. Collected at Maywoods.

**Cerastium vulgatum* L., R.L. Thompson 12-603 (BEREA), Knobs, Uncommon, Mesic, Ruderal. Collected at Maywoods. Also collected at Maywoods by Donna A. Godbey 89 (EKY).

**Dianthus armeria* L., R.L. Thompson 12-574 (BEREA), Knobs, Mesic, Uncommon, Ruderal. Collected at Maywoods. Also collected at Maywoods by Donna A. Godbey 316 (EKY).

**Holosteum umbellatum* L., R.L. Thompson 04-197 (BEREA), Palisades, Uncommon, Xeric, Ruderal. Collected at Camp Nelson Quarry.

Minuartia patula (Michx.) Mattf., W.W. Overbeck 1187 (EKY), Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected at Reynolds Prairie. Also collected at Camp Nelson Quarry by R.L. Thompson 97-254 (BEREA).

Paronychia canadensis (L.) Wood, W.W. Overbeck 515 (EKY), Knobs, Rare, Xeric, Woodland. Collected at Maywoods on an eroding shale slope at the roadside near the lodge.

Paronychia fastigiata (Raf.) Fernald, W.W. Overbeck 1606 (EKY), Knobs, Rare, Xeric, Woodland. Collected on Day Road at a shale outcrop.

**Saponaria officinalis* L., W.W. Overbeck 708 (EKY), Palisades, Uncommon, Mesic, Ruderal. Collected at the Kings Mill Road boat launch at Herrington Lake. Also collected at Maywoods by Donna A. Godbey 383 (EKY).

Silene antirrhina L., R.L. Thompson 97-417 (BEREA), Palisades, Uncommon, Mesic to Xeric, Ruderal. Collected at Camp Nelson Quarry.

Silene caroliniana Walter, W.W. Overbeck 1256 (EKY), Palisades, Rare, Mesic to Xeric, Woodland. Collected along the Dix River upstream from Highway 52 growing with *Dodecatheon meadia*.

**Silene latifolia* Poir., W.W. Overbeck 471 (EKY), Knobs, Uncommon, Mesic, Ruderal. Collected at Maywoods.

Silene rotundifolia Nutt., J.L. Gentry, Jr. 1235 (EKY), Palisades, Rare, Xeric, Woodland. Collected at White Oak Creek.

Silene stellata (L.) W.T. Aiton, W.W. Overbeck 596 (EKY), Knobs, Rare, Mesic, Woodland. Collected at Maywoods.

Silene virginica L., W.W. Overbeck 356 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

***Stellaria media* (L.) Vill., W.W. Overbeck 182, 189, 193 (EKY), Palisades, Eden Hills, Abundant, Mesic, Ruderal. Collected at Highway 563 at Scott's Fork of Sugar Creek, Paper Mill Road at an old quarry, and Kings Mill Road boat launch at Herrington Lake. Also collected at Maywoods by R.L. Thompson 12-327 (BEREA).

Stellaria pubera Michx., W.W. Overbeck 238, 371, 1101 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve and Tom Dorman State Nature Preserve.

Celastraceae

***Celastrus orbiculatus* Thunb., R.L. Thompson 12-318 (BEREA), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods in Mesic Forest in eroding soil.

Celastrus scandens L., W.W. Overbeck 1164 (EKY), Flatwoods, Uncommon, Mesic, Woodland. Collected on Brock Road at the intersection of Old Richmond Road. Also collected at Maywoods by Donna A. Godbey 362 (EKY).

***Euonymus alatus* (Thunb.) Sieb., W.W. Overbeck 1215, 1663 (EKY), Outer Bluegrass, Dolomitic Foothills, Uncommon, Mesic, Woodland. Collected along White Lick Creek near Highway 52 and at Reynolds Prairie.

Euonymus americanus L., W.W. Overbeck 1602 (EKY), Palisades, Rare, Mesic, Woodland. Collected at Sally Brown Preserve in Mesic Forest.

Euonymus atropurpureus Jacq., W.W. Overbeck 1544 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected along the Dix River upstream from Highway 52. Also collected at Maywoods by R.L. Thompson 12-582 (BEREA).

***Euonymus fortunei* (Turcz.) Hand.-Mazz., W.W. Overbeck 1725, (EKY), Palisades, Frequent, Mesic, Woodland. Documented by photo voucher at Highway 39 at the Kentucky River. Abundant in the North half of Garrard County, a significant invasive species.

Euonymus obovatus Nutt., Mary E. Wharton 9495 (KY), Palisades, Rare, Mesic, Woodland. Collected at White Oak Creek.

Chenopodiaceae

***Chenopodium album* L., W.W. Overbeck 1590 (EKY), Palisades, Uncommon, Mesic, Ruderal. Collected at Sally Brown Preserve. Also collected at Camp Nelson Quarry by R.L. Thompson 00-543 (BEREA).

**Chenopodium ambrosioides* L., W.W. Overbeck 693, 842 (EKY), Palisades, Uncommon, Mesic, Ruderal. Collected at Sally Brown Preserve and at the Dix River near Highway 52.

Chenopodium pratericola Rydb., W.W. Overbeck 822 (EKY), Outer Bluegrass, Uncommon, Xeric, Ruderal. Collected in the town of Paint Lick in parking lot concrete.

Cistaceae

Lechea racemulosa Michx., W.W. Overbeck 1323, 1667 (EKY), Knobs, Rare, Xeric Grassland. Collected off Dave Eden Road in a clear cut and at the end of Joe Damrell Road.

Clusiaceae

Hypericum dolabriforme Vent., W.W. Overbeck 562, 1673 (EKY), Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected at Brock Road and at Reynolds Prairie.

Hypericum gentianoides (L.) BSP., W.W. Overbeck 592, 1324, 1409 (EKY), Knobs, Uncommon, Xeric, Grassland. Collected off Dave Eden Road in a clear cut and at Maywoods.

Hypericum mutilum L., W.W. Overbeck 765, 850, 1470 (EKY), Knobs, Common, Hydric, Grassland. Collected at Maywoods in seasonally wet areas.

***Hypericum perforatum* L., W.W. Overbeck 500 (EKY), Outer Bluegrass, Uncommon, Mesic, Ruderal. Collected on Highway 52 in a vacant development across from County Road 1239.

Hypericum punctatum Lam., W.W. Overbeck 584 (EKY), Knobs, Uncommon, Woodland. Collected at Maywoods.

Hypericum sphaerocarpum Michx., W.W. Overbeck 556, 1368 (EKY), Outer Bluegrass, Dolomitic Foothills, Uncommon, Hydric, Woodland. Collected along White Lick Creek near Highway 52 and at Reynolds Prairie.

Hypericum stragulum W.P. Adams & N. Robson, W.W. Overbeck 621 (EKY), Knobs, Uncommon, Xeric, Woodland. Collected on Hamilton Valley Road between Harmon's Lick road and Narrow Gap Road.

Convolvulaceae

Calystegia sepium (L.) R. Br., W.W. Overbeck 590, 646, 715 (EKY), Dolomitic Foothills, Knobs, Common, Mesic to Hydric, Ruderal. Collected at Reynolds Prairie and Maywoods. Also collected at Camp Nelson Quarry by R.L. Thompson 00-519 (BEREA)

***Ipomoea hederacea* Jacq., W.W. Overbeck 915 (EKY), Dolomitic Foothills, Uncommon, Mesic, Ruderal. Collected on Brock Road in a roadside ditch.

Ipomoea lacunosa L., R.L. Thompson 00-553 (BEREA), Palisades, Uncommon, Mesic, Woodland. Collected at Camp Nelson Quarry.

Ipomoea pandurata (L.) G.F.W. Mey., W.W. Overbeck 627 (EKY), Knobs, Uncommon, Mesic to Hydric, Woodland. Collected on Hamilton Valley Road between Harmon's Lick road and Narrow Gap Road.

Cornaceae

Cornus alternifolia L.f., W.W. Overbeck 316 (EKY), Eden Hills, Rare, Mesic, Woodland. Collected on Scott's Fork of Sugar Creek growing with *Viburnum dentatum*.

Cornus amomum P. Mill., W.W. Overbeck 1252, 1474 (EKY), Palisades, Knobs, Rare, Collected at Maywoods on a tributary of Copper Creek and along the Dix River upstream from Highway 52.

Cornus drummondii C.A.Mey., W.W. Overbeck 503, 1131 (EKY), Outer Bluegrass, Knobs, Frequent, Woodland. Collected at Maywoods and on Highway 52 near County Road 1239. Observed commonly on woodland edges and old fields throughout Garrard County.

Cornus florida L., W.W. Overbeck 240, 972 (EKY), Palisades, Knobs, Common, Mesic to Xeric, Woodland. Collected at Tom Dorman State Nature Preserve and Maywoods.

Crassulaceae

Sedum pulchellum Michx., R.L. Thompson 97-446 (BEREA), Palisades, Uncommon, Xeric, Grassland. Collected at Camp Nelson Quarry.

**Sedum sarmentosum* Bunge, W.W. Overbeck 512 (EKY), Palisades, Uncommon, Mesic to Hydric, Woodland. Collected along White Oak Creek at Tom Dorman State Nature Preserve.

Sedum ternatum Michx., W.W. Overbeck 315 (EKY), Eden Hills, Uncommon, Mesic, Woodland. Collected along Scott's Fork of Sugar Creek in Mesic Forest on limestone cliffs.

Cucurbitaceae

Sicyos angulatus L., W.W. Overbeck 849, 946, 1584, 1626 (EKY), Palisades, Eden Hills, Uncommon, Hydric, Woodland. Collected at Broadus Branch in Calcareous Mesophytic Forest, Sally Brown Preserve, and along the Dix River on floodplains.

Cuscutaceae

Cuscuta gronovii Willd., Donna A. Godbey 671 (EKY), Knobs, Uncommon, Mesic, Grasslands. Collected at Maywoods.

Cuscuta pentagona Engelm., W.W. Overbeck 1379 (EKY), Knobs, Rare, Mesic, Grassland. Collected on Brock Road in a shale stream corridor growing parasitic on *Solidago canadensis*.

Dipsacaceae

***Dipsacus fullonum* L., R.L. Thompson 00-374 (BEREA), Palisades, Uncommon, Mesic, Ruderal. Collected at Camp Nelson Quarry.

***Dipsacus laciniatus* L., R.L. Thompson 03-862 (BEREA), Palisades, Uncommon, Mesic, Ruderal. Collected at Camp Nelson Quarry.

Ebenaceae

Diospyros virginiana L., W.W. Overbeck 1495 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve.

Elaeagnaceae

***Elaeagnus umbellata* Thunb., W.W. Overbeck 1522, 1635 (EKY), Dolomitic Foothills, Uncommon, Mesic, Grassland. Collected at Reynolds Prairie.

Ericaceae

Epigaea repens L., W.W. Overbeck 768 (EKY), Knobs, Rare, Mesic to Xeric, Woodland. Collected at Maywoods.

Gaultheria procumbens L., W.W. Overbeck 773 (EKY), Knobs, Uncommon, Mesic to Xeric, Woodland. Collected at Maywoods.

Gaylussacia baccata (Wang.) K. Koch., Donna A. Godbey 93 (EKY), Knobs, Uncommon, Xeric, Woodland. Collected at Maywoods.

Kalmia latifolia L., Donna A. Godbey 92 (EKY), Knobs, Rare, Mesic, Woodland. Collected at Maywoods.

Oxydendrum arboreum (L.) DC., Donna A. Godbey 434 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Vaccinium corymbosum L., W.W. Overbeck 1467, 1475 (EKY), Knobs, Uncommon, Xeric, Woodland. Collected at Maywoods.

Vaccinium pallidum Aiton, W.W. Overbeck 347 (EKY), Knobs, Uncommon, Xeric, Woodland. Collected at Maywoods.

Vaccinium stamineum L., W.W. Overbeck 345, 416, 939 (EKY), Knobs, Common, Mesic to Xeric, Woodland. Collected at Maywoods.

Euphorbiaceae

Acalypha ostryifolia Riddell, W.W. Overbeck 681, 689, 702 (EKY), Palisades, Uncommon, Mesic to Xeric, Ruderal. Collected at Kings Mill Road boat launch and along the Dix River. Collected at Camp Nelson Quarry too by R.L. Thompson 96-609 (BEREA).

Acalypha rhomboidea Raf., W.W. Overbeck 1594 (EKY), Palisades, Common, Mesic to Xeric, Woodland. Collected at Sally Brown Preserve. Also collected at Camp Nelson Quarry by R.L. Thompson 00-517 (BEREA).

Acalypha virginica L., W.W. Overbeck 789, 791, 1423, 1601 (EKY), Palisades, Knobs, Common, Mesic, Woodland. Collected at Sally Brown Preserve, Tom Dorman State Nature Preserve and Maywoods.

Croton monanthogynus Michx., W.W. Overbeck 706, (EKY), Palisades, Uncommon, Xeric, Grassland. Collected at Kings Mill Road boat launch. Also collected at Camp Nelson Quarry by R.L. Thompson 03-854 (BEREA).

Euphorbia commutata Engelm., W.W. Overbeck 1421, 1694 (EKY), Palisades, Rare, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve.

Euphorbia corollata L., W.W. Overbeck 638, 740 (EKY), Palisades, Doornitic Foothills, Uncommon, Mesic to Xeric, Grassland. Collected at Tom Dorman State Nature Preserve and Reynolds Prairie.

Euphorbia dentata Michx., W.W. Overbeck 703, 899 (EKY), Palisades, Dolomitic Foothills, Uncommon, Xeric, Ruderal. Collected at Kings Mill Road boat launch and Old Richmond Road. Also collected at Camp Nelson Quarry by R.L. Thompson 00-537 (BEREA).

Euphorbia maculata L., W.W. Overbeck 716 (EKY), Palisades, Common, Xeric, Ruderal. Collected at Kings Mill Road boat launch. Also collected at Camp Nelson Quarry by R.L. Thompson 00-539 (BEREA).

Euphorbia nutans Lag., W.W. Overbeck 692, 1376, 1450, 1545 (EKY), Palisades, Knobs, Uncommon, Ruderal. Collected along the Dix River upstream from Highway 52 and on Fall Lick Creek at Hamilton Valley Road. Also collected at Camp Nelson Quarry by R.L. Thompson 00-561(BEREA).

Phyllanthus caroliniensis Walter, W.W. Overbeck 881, 940 (EKY), Palisades, Uncommon, Hydric, Woodland. Collected at Tom Dorman State Nature Preserve growing near the Kentucky River.

Fabaceae

***Albizia julibrissin* Durazz., W.W. Overbeck 1625 (EKY), Eden Hills, Uncommon, Mesic, Ruderal. Collected on Broadus Branch Road on a roadside across from an abandoned dwelling.

Amorpha fruticosa L., W.W. Overbeck 928, 1546 (EKY), Palisades, Eden Hills, Rare, Hydric, Woodland. Collected along Highway 1295 just West of the county line and on the shore line of Herrington Lake. Also observed in cobble bars of the Dix River upstream from Highway 52.

Amphicarpaea bracteata (L.) Fernald, W.W. Overbeck 783 (EKY), Knobs, Common, Mesic to Hydric, Woodland. Collected at Maywoods. Observed in Mesic Forest across the county.

Apios americana Medik., W.W. Overbeck 805 (EKY), Outer Bluegrass, Uncommon, Hydric, Woodland. Collected along Paint Lick Creek at Highway 52. Also collected at Camp Nelson Quarry by R.L. Thompson 12-586 (BEREA).

Baptisia australis (L.) R. Br., W.W. Overbeck 1401, (EKY), Knobs, Rare, Mesic to Xeric, Grassland. Collected at Maywoods in a planted prairie. Observed in the Dolomitic Foothills in the vicinity of Highway 1972 growing on fence lines in Xeric Limestone Prairie.

Cercis canadensis L., W.W. Overbeck 247, 1062 (EKY), Palisades, Knobs, Frequent, Mesic to Xeric, Woodland. Collected at Tom Dorman State Nature Preserve and on Jones Road. Also collected by R.L. Thompson (BEREA) at Camp Nelson Quarry.

Chamaecrista fasciculata (Michx.) Greene, W.W. Overbeck 647, 651, 1515 (EKY), Dolomitic Foothills, Knobs, Uncommon, Grassland. Collected at Reynolds Prairie and Maywoods.

Cladrastis kentukea (Dum. Cours.) Rudd, Dan Pitillo 2242 (KY), Palisades, Rare, Woodland. Collected near the Kentucky River at Camp Nelson.

Clitoria mariana L., J. Stuart Lassetter 2528 (EKY), Knobs, Uncommon, Mesic to Xeric, Woodland. Collected at Maywoods. Also collected at Maywoods by Donna A. Godbey 395 (EKY).

***Coronilla varia* L., W.W. Overbeck 470 (EKY), Knobs, Common, Mesic to Xeric, Ruderal. Collected at Maywoods. Also collected at Maywoods by Donna A. Godbey 276 (EKY) and R.L. Thompson 12-604 (BEREA)

Desmodium ciliare (Muhl. ex Willd.) DC., W.W. Overbeck 785, 986, 1506, 1513 (EKY), Dolomitic Foothills, Knobs, Uncommon, Xeric, Grassland. Collected at Reynolds Prairie, Jones Road, and Maywoods.

Desmodium glabellum (Michx.) DC., W.W. Overbeck 874, 1387 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected on Brock Road and at Maywoods.

Desmodium glutinosum (Muhl. ex Willd.) Alph. Wood, W.W. Overbeck 571 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Desmodium marilandicum (L.) DC., W.W. Overbeck 861 (EKY), Knobs, Uncommon, Mesic to Xeric, Grassland. Collected on Hamilton Valley Road.

Desmodium nudiflorum (L.) DC., W.W. Overbeck 574 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Desmodium paniculatum (L.) DC., W.W. Overbeck 853, 892 (EKY), Palisades, Eden Hills, Common, Mesic, Ruderal. Collected at Maywoods and at a roadside pasture on Highway 1845 (Rogers Road).

Desmodium pauciflorum (Nutt.) DC., W.W. Overbeck 1384, 1509 (EKY), Palisades, Dolomitic Foothills, Uncommon, Mesic to Xeric, Woodland. Collected at Reynolds Prairie and Sally Brown Preserve.

Desmodium rotundifolia DC., Donna A. Godbey 604 (EKY), Knobs, Uncommon, Xeric, Woodland. Collected at Maywoods.

Galactia volubilis (L.) Britton, W.W. Overbeck 640, 734 (EKY), Palisades, Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve and Reynolds Prairie.

Gleditsia triacanthos L., Mary E. Wharton 9510 (EKY), Palisades, Common, Mesic, Woodland. Collected at Camp Nelson.

Gymnocladus dioicus (L.) K. Koch., Mary E. Wharton 10432 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Polly's Bend.

**Lathyrus latifolius* L., W.W. Overbeck 824 (EKY), Outer Bluegrass, Uncommon, Mesic, Ruderal. Collected in a roadside at Paint Lick on Highway 52

***Lespedeza cuneata* (Dum.Cours.) G. Don, W.W. Overbeck 739, 856, 1406, 1516 (EKY), Palisades, Dolomitic Foothills, Knobs, Collected at Tom Dorman State Nature Preserve, Rogers Road, Reynolds Prairie, and Maywoods. Also collected at Maywoods by R.L. Thompson 12-607 (BEREA).

Lespedeza hirta (L.) Hornem., W.W. Overbeck 770, 905, 985, 1000 (EKY), Knobs, Uncommon, Mesic to Xeric, Woodland. Collected at Calico Road, Jones Road, Reynolds Prairie, and Maywoods.

Lespedeza intermedia (S. Watson) Britton, W.W. Overbeck 1683 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at the end of Joe Damrell Road.

Lespedeza procumbens Michx., W.W. Overbeck 736, 784, 871, 912, 1574 (EKY), Palisades, Dolomitic Foothills, Knobs, Uncommon, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve, Old Richmond Road, and Maywoods.

Lespedeza repens (L.) W. Bart., W.W. Overbeck 635, 987, 1439 (EKY), Dolomitic Foothills, Knobs, Uncommon, Xeric, Grassland. Collected at Dave Eden Road, Jones Road, and Reynolds Prairie.

***Lespedeza stipulacea* Maxim., R.L. Thompson 00-535 (BEREA), Palisades, Frequent, Xeric, Ruderal. Collected at Camp Nelson Quarry.

***Lespedeza striata* (Thunb.) Hook & Arn., R.L. Thompson 00-540 (BEREA), Palisades, Common, Xeric, Ruderal. Collected at Camp Nelson Quarry.

Lespedeza violacea (L.) Pers., W.W. Overbeck 860 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected on Narrow Gap Road.

Lespedeza virginica (L.) Britton, W.W. Overbeck 751, 1512, 1518 (EKY), Palisades, Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve and Reynolds Prairie.

***Medicago lupulina* L., W.W. Overbeck 242 (EKY), Palisades, Common, Mesic, Ruderal. Collected at Tom Dorman State Nature Preserve. Also collected at Maywoods by R.L. Thompson 12-343 (BEREA).

***Melilotus alba* Medik., Donna A. Godbey 455 (EKY), Knobs, Uncommon, Mesic, Ruderal. Also collected at Camp Nelson Quarry by R.L. Thompson 97-121 (BEREA).

***Melilotus officinalis* (L.) Desr., Donna A. Godbey 361 (EKY), Knobs, Uncommon, Xeric, Ruderal. Collected at Maywoods. Also collected at Camp Nelson Quarry by R.L. Thompson 97-426 (BEREA).

Orbexilum onobrychis (Nutt.) Rydb., W.W. Overbeck 636 (EKY), Dolomitic Foothills, Rare, Mesic to Xeric, Grassland. Collected at Reynolds Prairie growing in association with *Juniperus virginiana*.

Orbexilum pedunculatum (P. Mill.) Rydb., W.W. Overbeck 481, 642, 1302, 1306 (EKY), Dolomitic Foothills, Knobs, Uncommon, Xeric, Woodland. Collected at Reynolds Prairie, Jones Road, and Gabbard Road. Observed at Maywoods.

Phaseolus polystachios (L.) BSP., W.W. Overbeck 1424 (EKY), Palisades, Rare, Xeric, Woodland. Collected at Tom Dorman State Nature Preserve.

*****Pueraria montana* (Lour.) Merr. var. *lobata* (Willd.) Maesen & S.M. Almeida, W.W. Overbeck 889a, (EKY), Palisades, Uncommon, Mesic, Ruderal. Collected at the Kennedy Bridge (Highway 152) on limestone cliffs above Herrington Lake.**

Robinia hispida L., W.W. Overbeck 1224 (EKY), Dolomitic Foothills, Uncommon, Xeric, Ruderal. Collected on South Old Richmond Road at the intersection of Drakes Creek Road and Harmon's Lick Road. Also collected by R.L. Thompson 12-616 (BEREA) on Highway 954 at Cartersville.

Robinia pseudoacacia L., W.W. Overbeck 400 (EKY), Palisades, Abundant, Mesic, Woodland. Collected at Sally Brown Preserve. Also collected at Camp Nelson Quarry by R.L. Thompson 04-1104 (BEREA) and at White Oak Creek by Mary E. Wharton 9890 (EKY).

Senna marilandica (L.) Link, W.W. Overbeck 1353 (EKY), Dolomitic Foothills, Uncommon, Mesic, Grassland. Collected on Harmon's Lick Road.

Strophostyles helvula (L.) Elliott, W.W. Overbeck 1369 (EKY), Knobs, Rare, Mesic to Hydric, Grassland. Collected at White Lick Church on Highway 954 (Cartersville Road) along White Lick Creek.

Stylosanthes biflora (L.) BSP, W.W. Overbeck 482 (EKY), Knobs, Uncommon, Xeric, Grassland. Collected on Jones Road.

Tephrosia virginiana (L.) Pers., Donna A. Godbey 394 (EKY), Rare, Knobs, Xeric, Woodland. Collected at Maywoods on the South facing banks of the lake.

*****Trifolium campestre* Schreb., W.W. Overbeck 376, 687 (EKY), Palisades, Common, Mesic, Ruderal. Collected at Sally Brown Preserve and along the Dix River upstream from Highway 52. Also collected at Camp Nelson Quarry by R.L. Thompson 04-200 (BEREA) and at Maywoods by Donna A. Godbey 146 (EKY).**

****Trifolium dubium* Sibth., W.W. Overbeck 1262 (EKY), Palisades, Common, Mesic, Ruderal. Collected at Tom Dorman State Nature Preserve. Observed throughout the county.**

*****Trifolium pratense* L., W.W. Overbeck 863 (EKY), Knobs, Common, Mesic, Ruderal. Collected on Hamilton Valley Road. Observed throughout the county, abundant in hay fields.**

*****Trifolium repens* L., W.W. Overbeck 375 (EKY), Palisades, Abundant, Mesic, Ruderal. Collected at Sally Brown Preserve. Also collected at Camp Nelson Quarry by R.L. Thompson 97-406 (BEREA) and Maywoods by Donna A. Godbey 145 (EKY). Frequent throughout the county, abundant in lawns.**

Vicia caroliniana Walter, W.W. Overbeck 1094 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods. Also collected at Maywoods by R.L. Thompson 12-310 (BEREA).

***Vicia sativa* L., R.L. Thompson 04-199 (BEREA), Palisades, Uncommon, Mesic, Ruderal. Collected at Camp Nelson Quarry.

***Vicia villosa* Roth, W.W. Overbeck 1227 (EKY), Palisades, Common, Mesic, Ruderal. Collected at Tom Dorman State Nature Preserve.

***Wisteria sinensis* (Sims) DC., W.W. Overbeck 299 (EKY), Eden Hills, Uncommon, Mesic, Ruderal. Collected at Scott's Fork of Sugar Creek. Observed on Camp Nelson Road and also on Long Branch Road.

Fagaceae

!*Castanea dentata* (Marshall) Borkh., Donna A. Godbey 105 (EKY), Knobs, Rare, Mesic, Woodland. Collected at Maywoods.

Fagus grandifolia Ehrh., W.W. Overbeck 1109, 1628 (EKY), Palisades, Eden Hills, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve and Broadus Branch Road in Calcareous Mesophytic Forest at both sites.

Quercus alba L., W.W. Overbeck 199, 895, 1391 (EKY), Palisades, Flatwoods, Knobs, Common, Mesic, Woodland. Collected at Polly's Bend Road, Old Richmond Road at Good Hope Church Road, and Harmon's Lick Road.

Quercus bicolor Willd., W.W. Overbeck 1157, 1351 (EKY), Flatwoods, Rare, Hydric, Woodland. Collected on Harmon's Lick Road (Highway 3246) between Cartersville Road and Starnes Road. Also observed at the corner of Brock Road and Old Richmond Road growing with *Quercus palustris*, *Quercus stellata*, *Diospyros americana*, *Rosa setigera*, and *Celastrus scandens*.

Quercus coccinea Munchh., Donna A. Godbey 675 (EKY), Knobs, Common, Xeric to Mesic, Woodland. Collected at Maywoods.

Quercus falcata Michx., W.W. Overbeck 1176 (EKY), Dolomitic Foothills, Rare, Xeric, Woodland. Collected on Wallacetown Road near White Lick Road. Also observed at Maywoods.

Quercus imbricaria Michx., W.W. Overbeck 533 (EKY), Knobs, Uncommon, Mesic to Hydric, Woodland. Collected on Narrow Gap Road near Hamilton Valley Road. Also observed at Tom Dorman Nature Preserve and Reynolds Prairie.

Quercus macrocarpa Michx., W.W. Overbeck 1656 (EKY), Dolomitic Foothills, Rare, Mesic to Hydric, Woodland. Collected on Drakes Creek Road at Old Fall Lick Road along Drakes Creek.

Quercus montana Willd., W.W. Overbeck 438, 777, 1466, 1605 (EKY), Knobs, Common, Mesic to Xeric, Woodland. Collected on Day Road and at Maywoods. Also collected by Donna A. Godbey 522 (EKY) at Maywoods.

Quercus muhlenbergii Engelm., W.W. Overbeck 393, 1399, 1543 (EKY), Palisades, Knobs, Frequent, Mesic to Xeric, Woodland. Collected at Sally Brown Preserve, along the Dix River, and Maywoods. Observed at Reynolds Prairie and throughout the county on limestone soils.

Quercus palustris Müenchh., W.W. Overbeck 1670 , (EKY), Flatwoods, Uncommon, Hydric, Woodland. Collected on Highway 1972 at Good Hope Church Road. Commonly planted as a yard tree.

Quercus rubra L., W.W. Overbeck 970, 1380, 1435 (EKY), Palisades, Knobs, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve, Tom Dorman State Nature Preserve, and Maywoods.

Quercus shumardii Buckley, W.W. Overbeck 1487, 1620 (EKY), Eden Hills, Knobs, Common, Mesic, Woodland. Collected at Broadus Branch Road and Narrow Gap Road. Observed commonly on limestone soils.

Quercus stellata Wangenh., W.W. Overbeck 1163, 1398, 1617 (EKY), Flatwoods, Knobs, Uncommon, Mesic to Xeric, Woodland. Collected at Brock Road at the corner of Old Richmond Road and at Maywoods. Observed at Reynolds Prairie.

Quercus velutina Lam., W.W. Overbeck 771, 968, 1350, 1390, 1461, 1492 (EKY), Palisades, Knobs, Mesic to Xeric, Woodland. Collected at Tom Dorman State Nature Preserve, Harmon's Lick Road, Narrow Gap Road, and Maywoods.

Fumariaceae

Corydalis flavula (Raf.) DC., W.W. Overbeck 170, 203 (EKY), Palisades, Eden Hills, Mesic, Woodland. Collected at Long Branch Road and at Sally Brown Preserve. Collected at Camp Nelson Quarry tooby R.L. Thompson 97-443 (BEREA).

Dicentra canadensis (Goldie) Walp., Eric Comley 3 (EKY), Outer Bluegrass, Uncommon, Mesic, Woodland. Collected on Rucker Farm.

Dicentra cucullaria (L.) Bernh., W.W. Overbeck 184 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected along the Dix River upstream from Highway 52.

Gentianaceae

Obolaria virginica L., J. Campbell s.n. (KY), Palisades, Rare, Mesic, Woodland. Collected at White Oak Creek.

Sabatia angularis (L.) Pursh, R.L. Thompson 00-379 (BEREA), Palisades, Uncommon, Mesic to Xeric, Grassland. Collected at Camp Nelson Quarry. Also collected at Maywoods by Donna A. Godbey 432 (EKY).

Geraniaceae

Geranium carolinianum L., W.W. Overbeck 370, 1205 (EKY), Palisades, Dolomitic Foothills, Common, Mesic, Ruderal. Collected at Sally Brown Preserve and Reynolds Prairie. Also collected at Camp Nelson Quarry by R.L. Thompson 97-443 (BEREA).

Geranium maculatum L., Donna A. Godbey 56 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Grossulariaceae

Ribes cynosbati L., W.W. Overbeck 729 (EKY), Palisades, Rare, Mesic to Xeric, Woodland. Collected at Tom Dorman State Nature Preserve.

Hamamelidaceae

Hamamelis virginiana L., Donna A. Godbey 239 (EKY), Knobs, Uncommon, Mesic to Hydric, Woodland. Collected at Maywoods.

Liquidambar styraciflua L., W.W. Overbeck 967 (EKY), Knobs, Uncommon, Mesic to Hydric, Woodland. Collected at Maywoods.

Hippocastanaceae

Aesculus flava Aiton, W.W. Overbeck 1167, 1622 (EKY), Eden Hills, Knobs, Uncommon, Mesic, Woodland. Collected at Broadus Branch in Calcareous Mesophytic Forest and White Lick Road at the corner of Cartersville Road along White Lick Creek. Also observed in the near the Palisades of the Kentucky River at Sally Brown Preserve.

Aesculus glabra Willd., W.W. Overbeck 234, 241, 1089 (EKY), Palisades, Eden Hills, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve, Long Branch Road, and Scott's Fork of Sugar Creek. Also observed at Reynolds Prairie.

Hydrangeaceae

Hydrangea arborescens L., W.W. Overbeck 839, (EKY) Palisades, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve. Also collected at Maywoods by Donna A. Godbey 234 (EKY).

Hydrophyllaceae

Hydrophyllum appendiculatum Michx., Mary E. Wharton 9886 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at White Oak Creek.

Hydrophyllum canadense L., Donna A. Godbey 315 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Hydrophyllum macrophyllum Nutt., W.W. Overbeck 1195 (EKY), Knobs, Uncommon, Mesic, Woodland. Also observed at Tom Dorman State Nature Preserve, Reynolds Prairie and Broadus Branch Road.

Phacelia bipinnatifida Michx., W.W. Overbeck 304 (EKY), Eden Hills, Uncommon, Mesic, Woodland. Collected on Scott's Fork of Sugar Creek. Also observed on Camp Nelson Road near Canoe Creek of the Kentucky River Palisades.

Phacelia purshii Buckley, W.W. Overbeck 309 (EKY), Eden Hills, Common, Mesic, Woodland. Collected at Scott's Fork of Sugar Creek. Observed throughout the county on limestone soils.

Juglandaceae

Carya cordiformis (Wangenh.) K. Koch, W.W. Overbeck 1251 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected along the Dix River upstream from Highway 52.

Carya glabra (P. Mill.) Sweet, W.W. Overbeck 767, 776, 778, 779, 801, 1477, 1478, 1520 (EKY), Dolomitic Foothills, Knobs, Common, Mesic, Forest. Collected at Reynolds Prairie and Maywoods.

Carya laciniosa (F. Michx.) Loudon, Donna A. Godbey 366 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Carya ovata (P. Mill.) K. Koch, W.W. Overbeck 175, 207, 1458 (EKY), Palisades, Eden Hills, Knobs, Common, Mesic, Woodland. Collected at Sally Brown Preserve, Teatersville Road, and Narrow Gap Road.

Carya tomentosa (Poir.) Nutt., W.W. Overbeck 800, 1476 (EKY), Knobs, Uncommon, Mesic to Xeric, Woodland. Collected at Maywoods.

Juglans cinerea L., W.W. Overbeck 578 (EKY), Knobs, Rare, Woodland. Collected at Maywoods in Calcareous Mesophytic Forest below the dam.

Juglans nigra L., W.W. Overbeck 836 (EKY), Palisades, Common, Mesic, Woodland. Collected at Sally Brown Preserve. Observed throughout the county in open woodland and forest edges.

Lamiaceae

Agastache nepetoides (L.) Kuntze, W.W. Overbeck 851 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve in Mesic Forest. Also observed at Reynolds Prairie on woodland edges.

Blephilia ciliata (L.) Benth., W.W. Overbeck 1210, 1514 (EKY), Dolomitic Foothills, Uncommon, Mesic to Xeric, Grassland. Collected at Reynolds Prairie.

Calamintha glabella (Michx.) Benth., W.W. Overbeck 1311 (EKY), Dolomitic Foothills, Rare, Xeric, Grassland. Collected at Reynolds Prairie growing with *Leavenworthia uniflora*, *Asclepias viridiflora*, *Schizachyrium scoparium*, and *Danthonia spicata*.

Collinsonia canadensis L., W.W. Overbeck 835, 1596 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve in Calcareous Mesophytic Forest.

Cunila origanoides (L.) Britton, W.W. Overbeck 675 (EKY), Knobs, Uncommon, Mesic to Xeric, Woodland. Collected at Maywoods. Also collected at Maywoods by Donna A. Godbey 475 (EKY).

***Glechoma hederacea* L., W.W. Overbeck 164 (EKY), Eden Hills, Abundant, Ruderal. Collected on Back Creek Road. Also collected at Camp Nelson Quarry by R.L. Thompson 97-259 (BEREA).

Hedeoma pulegioides (L.) Pers., W.W. Overbeck 761 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve.

Isanthus brachiatus (L.) BSP., W.W. Overbeck 721, 934 (EKY), Palisades, Rare, Xeric, Woodland. Collected at Tom Dorman State Nature Preserve. Also collected by R.L. Thompson 00-550 (BEREA) at Camp Nelson Quarry.

***Lamium amplexicaule* L., R.L. Thompson 97-249 (BEREA), Palisades, Frequent, Mesic to Xeric, Ruderal. Collected at Camp Nelson Quarry.

***Lamium purpureum* L., W.W. Overbeck 178 (EKY), Palisades, Frequent, Mesic, Ruderal. Collected at the Kentucky River at the end of Highway 39. Also collected at Maywoods by R.L. Thompson 12-330 (BEREA).

Lycopus virginicus L., W.W. Overbeck 795, 918 (EKY), Dolomitic Foothills, Knobs, Uncommon, Hydric, Woodland. Collected at Reynolds Prairie and Maywoods.

***Mentha* × *piperita* L. var. *piperita*, W.W. Overbeck 620, 1456 (EKY), Common, Palisades, Dolomitic Foothills, Hydric, Ruderal. Collected at White Oak Creek and on Highway 954 across from Dave Eden Road at Berea Estates in a wet ditch.

Monarda fistulosa L., W.W. Overbeck 583, 645, 1333, 1407, 1432, 1491, 1519 (EKY), Palisades, Dolomitic Foothills, Knobs, Uncommon, Mesic, Grassland. Collected at Tom Dorman State Nature Preserve, Reynolds Prairie, Harmon's Lick Road, and Maywoods.

***Perilla frutescens* (L.) Britton, W.W. Overbeck 678, 891 (EKY), Palisades, Eden Hills, Uncommon, Mesic to Hydric, Ruderal. Collected on Braudus Branch Road and along the Dix River.

Prunella vulgaris L., Donna A. Godbey 250 (EKY), Knobs, Common, Mesic, Ruderal. Collected at Maywoods. Also collected by R.L. Thompson 03-508 (BEREA) at Camp Nelson Quarry.

Pycnanthemum loomisii Nutt., W.W. Overbeck 633 (EKY), Knobs, Rare, Mesic, Grassland. Collected on Hamilton Valley Road between Harmon's Lick Road and Narrow Gap Road.

Pycnanthemum pycnanthemoides (Leavenw.) Fernald, Donna A. Godbey 405, 446 (EKY), Knobs, Uncommon, Mesic to Xeric, Woodland. Collected at Maywoods.

Pycnanthemum tenuifolium Schrad., W.W. Overbeck 676 (EKY), Knobs, Uncommon, Mesic to Xeric, Grassland. Collected at Maywoods. Also observed at Reynolds Prairie.

Salvia lyrata L., W.W. Overbeck 1160 (EKY), Dolomitic Foothills, Common, Mesic to Xeric, Grassland. Collected on Brock Road. Also collected at Maywoods by Donna A. Godbey 73 (EKY).

Scutellaria elliptica Muhl. ex Spreng., W.W. Overbeck 487 (EKY), Knobs, Uncommon, Mesic to Xeric, Woodland. Collected on Gabbard Road growing with *Rosa carolina*, *Asclepias tuberosa*, and *Asclepias amplexicaulis*. Also collected at Maywoods by R.L. Thompson 12-572 (BEREA).

Scutellaria incana Biehler, W.W. Overbeck 634, 1496, 1661 (EKY), Dolomitic Foothills, Knobs, Uncommon, Mesic to Xeric, Grassland. Collected on Gabbard Road, at Reynolds Prairie, and at Maywoods.

Scutellaria lateriflora L., W.W. Overbeck 1457 (EKY), Palisades, Uncommon, Hydric, Woodland. Collected along White Oak Creek at Tom Dorman State Nature Preserve.

Scutellaria nervosa Pursh, W.W. Overbeck 467, 1279 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Scutellaria ovata Hill, Donna A. Godbey 457 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Scutellaria parvula Michx., W.W. Overbeck 451 (EKY), Dolomitic Foothills, Rare, Xeric, Grassland. Collected at Reynolds Prairie.

Stachys cordata Riddell, W.W. Overbeck 1657 (EKY), Knobs, Rare, Mesic to Hydric, Woodland. Collected on Narrow Gap Road.

Stachys tenuifolia Willd., W.W. Overbeck 1337, 1342 (EKY), Palisades, Uncommon, Hydric, Woodland. Collected at Tom Dorman Nature Preserve and also at the end of Highway 39 on the Kentucky River floodplain.

Teucrium canadense L., W.W. Overbeck 617, 808, 1338 (EKY), Palisades, Outer Bluegrass, Dolomitic Foothills, Uncommon, Hydric, Grassland. Collected on the Kentucky River at Highway 39, on Paint Lick Creek at Highway 1295, and on Highway 954 at Berea Estates in a roadside ditch.

Lauraceae

Lindera benzoin (L.) Blume, W.W. Overbeck 176, 204, 730, 966, 1087 (EKY), Palisades, Eden Hills, Knobs, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve, Sally Brown Preserve, Teatersville Road, Highway 39 at the Kentucky River, and Maywoods.

Sassafras albidum (Nutt.) Nees, W.W. Overbeck 224, 1077 (EKY), Palisades, Knobs, Uncommon, Mesic to Xeric, Woodland. Collected at the end of Ross Road and at Maywoods.

Linaceae

Linum medium (Planch.) Britton, W.W. Overbeck 552 (EKY), Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected at Reynolds Prairie.

Linum sulcatum Riddell, W.W. Overbeck 639 (EKY), Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected at Reynolds Prairie.

**Linum usitatissimum* L., W.W. Overbeck 1112 (EKY), Dolomitic Foothills, Uncommon, Xeric, Ruderal. Collected on Highway 1972.

Linum virginianum L., W.W. Overbeck 601, 1326, 1357 (EKY), Knobs, Uncommon, Xeric, Grassland. Collected off Dave Eden Road in a clear cut and at Maywoods.

Lythraceae

Ammania coccinea Rottb., R.L. Thompson 03-874 (EKY), Palisades, Uncommon, Hydric, Ruderal. Collected at Camp Nelson Quarry.

Cuphea viscosissima Jacq., W.W. Overbeck 707 (EKY), Palisades, Uncommon, Mesic to Xeric, Grassland. Collected at Kings Mill Road boat launch at Herrington Lake.

***Lythrum salicaria* L., W.W. Overbeck 1660 (EKY), Knobs, Uncommon, Hydric, Grassland. Collected in a wet ditch on Copper Creek Road.

Rotala ramosior (L.) Koehne, R.L. Thompson 03-865 (BEREA), Palisades, Uncommon, Hydric, Ruderal. Collected at Camp Nelson Quarry.

Magnoliaceae

Liriodendron tulipifera L., W.W. Overbeck 1597 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected on the Kentucky River floodplain in Calcareous Mesophytic Forest. Frequent in the Knobs region and observed in Mesic Forest at Maywoods.

Magnolia tripetala L., Donna A. Godbey 663 (EKY), Knobs, Rare, Mesic, Woodland. Collected at Maywoods.

Malvaceae

Hibiscus moscheutos L., W.W. Overbeck 1371 (EKY), Knobs, Rare, Hydric, Grassland. Collected on White Lick Creek at White Lick Creek Church at the intersection of Cartersville Road (Highway 954) and White Lick Road.

***Hibiscus syriacus* L., W.W. Overbeck 505 (EKY), Palisades, Uncommon, Mesic, Ruderal. Collected on Highway 52 in disturbed soil of fence lines.

**Sida spinosa* L., W.W. Overbeck 683 (EKY), Palisades, Uncommon, Mesic to Xeric, Ruderal. Collected along the Dix River.

Melastomataceae

Rhexia virginica L., W.W. Overbeck 594 (EKY), Knobs, Rare, Hydric, Grassland. Collected at Maywoods.

Menispermaceae

Menispermum canadense L., W.W. Overbeck 1216 (EKY), Dolomitic Foothills, Uncommon, Mesic, Woodland. Collected at Reynolds Prairie in Mesic Forest. Also collected at Maywoods by Donna A. Godbey 164 (EKY).

Molluginaceae

**Mollugo verticillata* L., W.W. Overbeck 686 (EKY), Palisades, Uncommon, Mesic, Ruderal. Collected along the Dix River.

Monotropaceae

Monotropa hypopithys L., W.W. Overbeck 528 (EKY), Knobs, Rare, Mesic, Woodland. Collected at Maywoods.

Moraceae

**Maclura pomifera* (Raf.) C.K. Schneid., W.W. Overbeck 1228 (EKY), Palisades, Common, Mesic to Xeric, Ruderal. Collected at Tom Dorman State Nature Preserve.

***Morus alba* L., W.W. Overbeck 401 (EKY), Palisades, Common, Mesic, Ruderal. Collected at Sally Brown Preserve. Also collected at Camp Nelson Quarry by R.L. Thompson 00-739 (BEREA).

Morus rubra L., W.W. Overbeck 963, 1179 (EKY), Dolomitic Foothills, Knobs, Uncommon, Mesic, Woodland. Collected on Wallacetown Road and at Maywoods.

Nyctaginaceae

Mirabilis nyctaginea (Michx.) MacMill., W.W. Overbeck 712, 1196 (EKY), Dolomitic Foothills, Uncommon, Mesic to Xeric, Ruderal. Collected on Highway 3246 (Hamilton Valley Road) just South of Highway 954 (Cartersville Road).

Nyssaceae

Nyssa sylvatica Marshall, Mary E. Wharton 9959 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected on Rocky Fork. Also collected by Donna A. Godbey 127 (EKY) at Maywoods.

Oleaceae

Fraxinus americana L., W.W. Overbeck 779, 1395, 1402, 1447, 1479, 1485, 1489, 1548 (EKY), Palisades, Dolomitic Foothills, Knobs, Frequent, Mesic, Woodland. Collected at

Tom Dorman State Nature Preserve, Dix River, Harmon's Lick Road, Narrow Gap Road, and Maywoods. Observed throughout the county in Mesic Forest.

Fraxinus pennsylvanica Marshall, W.W. Overbeck 434, 1175, 1448 (EKY), Palisades, Flatwoods, Knobs, Common, Hydric, Woodland. Collected along the Dix River, on Wallacetown Road, and at Maywoods.

Fraxinus quadrangulata Michx., Mary E. Wharton 10106 (KY), Palisades, Uncommon, Mesic to Xeric, Woodland. Collected at White Oak Creek.

**Ligustrum obtusifolium* Sieb. & Zucc., R.L. Thompson 04-1105 (BEREA), Palisades, Uncommon, Mesic, Ruderal. Collected at Camp Nelson Quarry.

***Ligustrum sinense* Lour., W.W. Overbeck 1248 (EKY), Palisades, Uncommon, Mesic, Ruderal. Collected at Sally Brown Preserve.

Onagraceae

Circaea lutetiana (L.) Asch. & Magnus, W.W. Overbeck 521 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods along the logging access road.

Epilobium coloratum Biehler, R.L. Thompson 03-858 (BEREA), Palisades, Uncommon, Hydric, Ruderal. Collected at Camp Nelson Quarry.

Gaura biennis L., W.W. Overbeck 1503 (EKY), Dolomitic Foothills, Rare, Mesic to Hydric, Woodland. Collected along Drakes Creek on Old Fall Lick Road North of Drakes Creek Road.

Guara filipes Spach., W.W. Overbeck 1737 (EKY), Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected on Old Richmond Road.

Ludwigia alternifolia L., W.W. Overbeck 582, 798, 817 (EKY), Outer Bluegrass, Knobs, Uncommon, Hydric, Grassland. Collected along Paint Lick Creek at Highway 52 and at Maywoods.

Ludwigia decurrens Walter, W.W. Overbeck 843 (EKY), Palisades, Rare, Hydric, Woodland. Collected at Sally Brown Preserve.

Ludwigia palustris (L.) Elliott, W.W. Overbeck 804, 944, 1344 (EKY), Palisades, Knobs, Uncommon, Hydric, Woodland. Collected along the Dix River, along the Kentucky River at Tom Dorman State Nature Preserve, and at Maywoods. Also collected at Camp Nelson Quarry by R.L. Thompson 00-383 (BEREA).

Oenothera biennis L., W.W. Overbeck 821 (EKY), Outer Bluegrass, Common, Mesic to Xeric, Ruderal. Collected at Paint Lick on Highway 52. Collected at Camp Nelson Quarry too by R.L. Thompson 00-534 (BEREA).

Orobanchaceae

Conopholis americana (L.) Wallr., Donna A. Godbey 76 (EKY), Knobs, Rare, Mesic, Woodland. Collected at Maywoods.

Epifagus virginiana (L.) W. Bart., W.W. Overbeck 1623 (EKY), Eden Hills, Rare, Mesic, Woodland. Collected on Braudus Branch Road in Calcareous Mesophytic Forest growing with *Fagus grandifolia*, *Tipularia discolor*, *Phlox divaricata*, and *Aristolochia serpentaria*.

Oxalidaceae

**Oxalis corniculata* L., W.W. Overbeck 331 (EKY), Knobs, Common, Mesic to Xeric, Ruderal. Collected at Maywoods.

Oxalis dillenii Jacq., Donna A. Godbey 77 (EKY), Knobs, Uncommon, Mesic to Xeric, Grassland. Collected at Maywoods.

Oxalis grandis Small, W.W. Overbeck 1427 (EKY), Palisades, Rare, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve. Also collected at Maywoods by R.L. Thompson 12-600 (BEREA).

Oxalis stricta L., R.L. Thompson 00-522, 12-325 (BEREA), Palisades, Common, Mesic to Xeric, Ruderal. Collected at Camp Nelson Quarry.

Oxalis violacea L., W.W. Overbeck 430, 1100 (EKY), Palisades, Knobs, Uncommon, Mesic to Xeric, Woodland. Collected at Sally Brown Preserve and at Maywoods.

Papaveraceae

Sanguinaria canadensis L., Donna A. Godbey 189 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Stylophorum diphyllum (Michx.) Nutt., W.W. Overbeck 314, 834 (EKY), Palisades, Eden Hills, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve and along Scott's Fork of Sugar Creek.

Passifloraceae

Passiflora incarnata L., R.L. Thompson 04-1112 (BEREA), Palisades, Rare, Mesic, Ruderal. Collected at Camp Nelson Quarry.

Passiflora lutea L. var. *glabriflora* Fernald, Edward T. Browne, Jr. and Elizabeth M. Browne 6507 (KY), Palisades, Rare, Mesic, Woodland. Collected at White Oak Creek.

Phytolaccaceae

Phytolacca americana L., R.L. Thompson 00-521 (BEREA), Palisades, Frequent, Mesic, Ruderal. Collected at Camp Nelson Quarry. Also collected at Maywoods by Donna A. Godbey 393 (EKY).

Phrymaceae

Phryma leptostachya L., W.W. Overbeck 1341 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve growing with *Carya ovata* and *Quercus shumardii* adjacent to the parking lot.

Plantaginaceae

Plantago aristata Michx., W.W. Overbeck 1317 (EKY), Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected at Reynolds Prairie in Xeric Limestone Prairie growing with *Leavenworthia uniflora* and *Hypericum dolabriforme*.

**Plantago lanceolata* L., W.W. Overbeck 439 (EKY), Knobs, Common, Mesic, Ruderal. Collected at Maywoods. Also collected at Camp Nelson Quarry by R.L. Thompson 97-457 (BEREA).

Plantago rugelii Decne., W.W. Overbeck 677 (EKY), Palisades, Common, Mesic, Ruderal. Collected along the Dix River. Also collected by R.L. Thompson 03-856 (BEREA) at Camp Nelson Quarry and Donna A. Godbey 343 (EKY) at Maywoods.
Plantago virginica L., W.W. Overbeck 310 (EKY), Eden Hills, Uncommon, Mesic to Xeric, Grassland. Collected on Scott's Fork of Sugar Creek. Also collected at Camp Nelson Quarry by R.L. Thompson 97-411 (BEREA) and at Maywoods by R.L. Thompson 12-590 (BEREA) and Donna A. Godbey 121 (EKY).

Platanaceae

Platanus occidentalis L., Mary E. Wharton 9957 (EKY), Palisades, Frequent, Mesic to Hydric, Woodland. Collected at Rocky Creek. Also collected at Camp Nelson Quarry by R.L. Thompson 00-555 (BEREA).

Polemonaceae

!*Phlox bifida* Beck subsp. *stellaria* (A.Gray) Wherry, Mary E. Wharton 9879 (KY), Palisades, Rare, Xeric, Woodland. Collected at White Oak Creek

Phlox divaricata L., W.W. Overbeck 245, 306 (EKY), Palisades, Eden Hills, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve and along Scott's Fork of Sugar Creek.

Phlox glaberrima L., W.W. Overbeck 456 (EKY), Knobs, Uncommon, Mesic to Hydric, Woodland. Collected at Maywoods.

Phlox maculata L., W.W. Overbeck 1307 (EKY), Knobs, Uncommon, Mesic, Grassland. Also collected at Maywoods by Donna A. Godbey 447 (EKY).

Phlox paniculata L., W.W. Overbeck 848, 1455 (EKY), Palisades, Uncommon, Mesic to Hydric, Woodland. Collected at Tom Dorman State Nature Preserve and Sally Brown Preserve in the floodplain of the Kentucky River. Also observed on Dripping Springs Road in the Knobs Region.

Polemonium reptans L., W.W. Overbeck 183, 334 (EKY), Eden Hills, Knobs, Uncommon, Mesic, Woodland. Collected on Highway 563 at Scott's Fork Road and at Maywoods.

Polygalaceae

Polygala ambigua Nutt., W.W. Overbeck 1327 (EKY), Knobs, Rare, Xeric, Woodland. Collected at Dave Eden Road in a clear cut.

Polygala sanguinea L., W.W. Overbeck 593 (EKY), Knobs, Rare, Mesic to Xeric, Grassland. Collected at Maywoods. Also observed on Joe Damrell Road growing with *Andropogon gerardii*.

Polygala senega L., Mary E. Wharton 9970 (EKY), Palisades, Rare, Mesic, Woodland. Collected near Rocky Fork.

Polygala verticillata L., W.W. Overbeck 644 (EKY), Dolomitic Foothills, Rare, Xeric, Grassland. Collected at Reynolds Prairie.

Polygonaceae

Polygonum amphibium L., W.W. Overbeck 600 (EKY), Knobs, Rare, Aquatic. Collected on emergent shorelines at Maywoods.

**Polygonum aviculare* L., W.W. Overbeck 806 (EKY), Outer Bluegrass, Uncommon, Mesic to Xeric, Ruderal. Collected at Paint Lick on Highway 52. Also collected at Camp Nelson Quarry by R.L. Thompson 04-192 (BEREA).

***Polygonum caespitosum* Blume, W.W. Overbeck 504, 535, 685, 752, 792, 793, 840, 882, 1444, 1578, 1593 (EKY), Palisades, Outer Bluegrass, Knobs, Abundant, Mesic,

Ruderal. Collected at Tom Dorman State Nature Preserve, Sally Brown Preserve, Dix River, Paint Lick Creek, Calico Road, and Maywoods.

**Polygonum convolvulus* L., W.W. Overbeck 697 (EKY), Palisades, Uncommon, Mesic to Hydric, Grassland. Collected on cobble bars of the Dix River.

***Polygonum cuspidatum* Sieb. & Zucc., W.W. Overbeck 499, 718 (EKY), Palisades, Outer Bluegrass, Uncommon, Mesic, Ruderal. Collected at Kings Mill Road boat launch at Herrington Lake and on Highway 52 across from County Road 1239.

Polygonum erectum L., W.W. Overbeck 1453 (EKY), Palisades, Uncommon, Mesic to Hydric, Grassland. Collected along the Dix River.

Polygonum hydropiperoides Michx., W.W. Overbeck 1360 (EKY), Knobs, Common, Hydric, Grassland. Collected on lake margins at Maywoods.

Polygonum lapathifolium L., W.W. Overbeck 1443 (EKY), Palisades, Uncommon, Hydric, Grassland. Collected on cobble bars of the Dix River. Also collected by R.L. Thompson 00-526 (BEREA) at Camp Nelson Quarry.

Polygonum pennsylvanicum (L.) Small., Donna A. Godbey 482 (EKY), Knobs, Common, Mesic, Woodland. Collected at Maywoods. Also Collected at Camp Nelson by Mary E. Wharton 9469 (EKY).

***Polygonum persicaria* L., Donald Pelly 28 (EKY), Knobs, Common, Mesic, Ruderal. Collected at Maywoods. Collected at Camp Nelson Quarry too by R.L. Thompson 00-348 (BEREA).

Polygonum punctatum Elliott, W.W. Overbeck 880 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Polygonum sagittatum L., W.W. Overbeck 886 (EKY), Knobs, Rare, Hydric, Grassland. Collected at Maywoods on lake margins.

Polygonum scandens L., W.W. Overbeck 809, 1600 (EKY), Palisades, Outer Bluegrass, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve and on Paint Lick Creek at Highway 52. Also collected by R.L. Thompson 00-502 (BEREA) at Camp Nelson Quarry.

Polygonum virginianum L., W.W. Overbeck 731 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve.

***Rumex acetosella* L., W.W. Overbeck 1155 (EKY), Flatwoods, Mesic, Ruderal. Collected on Highway 3246 between Cartersville Road and Starnes Road. Also collected at Maywoods by Donna A. Godbey 85 (EKY).

**Rumex crispus* L., R.L. Thompson 00-356 (BEREA), Palisades, Common, Mesic, Ruderal. Collected at Camp Nelson Quarry. Also collected at Maywoods by Donna A. Godbey 350 (EKY).

Portulacaceae

Claytonia virginica L., W.W. Overbeck 181, 209 (EKY), Palisades, Eden Hills, Common, Mesic, Woodland. Collected on Highway 563 at Scott's Fork Road and at Sally Brown Preserve.

Primulaceae

**Anagallis arvensis* L., Donna A. Godbey 313 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Dodecatheon meadia L., J.L. Gentry, Jr. 1227 (EKY), Palisades, Rare, Mesic, Woodland. Collected at White Oak Creek.

Lysimachia quadrifolia L., W.W. Overbeck 491, 868, 1290 (EKY), Knobs, Uncommon, Mesic to Xeric, Grassland. Collected on Gabbard Road and at Maywoods.

Lysimachia ciliata L., Donna A. Godbey 321 (EKY), Knobs, Rare, Hydric, Woodland. Collected at Maywoods.

Samolus floribundus Kunth, W.W. Overbeck 1347 (EKY), Palisades, Uncommon, Hydric, Woodland. Collected on the Kentucky River at Tom Dorman State Nature Preserve.

Pyrolaceae

Chimaphila maculata (L.) Pursh, W.W. Overbeck 1612, 1689 (EKY), Palisades, Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods and by photo voucher at Tom Dorman State Nature Preserve.

Ranunculaceae

Actaea pachypoda Elliott, W.W. Overbeck 572 (EKY), Knobs, Rare, Mesic, Woodland. Collected at Maywoods.

Anemone virginiana L., W.W. Overbeck 560 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected on Hamilton Valley Road between Maywoods Road and Dripping Springs Road. Also collected at Camp Nelson Quarry by R.L. Thompson 00-523 (BEREA).

Anemonella thalictroides (L.) Spach, W.W. Overbeck 173 (EKY), Eden Hills, Uncommon, Mesic, Woodland. Collected on Teatersville Road.

Aquilegia canadensis L., W.W. Overbeck 354 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected on a rock outcrop above Fall Lick Creek.

*****Clematis terniflora* DC.**, W.W. Overbeck 1541 (EKY), Palisades, Common, Mesic, Ruderal. Collected along the Dix River and observed throughout the county, but mostly in limestone areas.

Clematis viorna L., Mary E. Wharton 10443 (EKY), Palisades, Rare, Mesic, Woodland. Collected at Polly's Bend.

Clematis virginiana L., W.W. Overbeck 722, (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve. Also collected at Camp Nelson Quarry by R.L. Thompson 00-346 (BEREA) and at Maywoods R.L. Thompson 12-576 (BEREA).

Delphinium tricornis Michx., W.W. Overbeck 214, 229 (EKY), Eden Hills, Uncommon, Mesic, Woodland. Collected at Back Creek Road and at Paint Lick Creek on Highway 52.

Enemion biternatum Raf., W.W. Overbeck 305, 1102 (EKY), Palisades, Eden Hills, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve and Scott's Fork of Sugar Creek.

Hepatica acutiloba DC., W.W. Overbeck 211 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods along Fall Lick Creek.

Hepatica americana (D.C.) Ker Gawl., Donna A. Godbey 52 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Hydrastis canadensis L., W.W. Overbeck 1207 (EKY), Dolomitic Foothills, Rare, Mesic, Woodland. Collected at Reynolds Prairie in Mesic Forest. Also collected by J. Campbell s.n. (UK) on US 27 near Shine Farm.

Ranunculus abortivus L., W.W. Overbeck 219 (EKY), Outer Bluegrass, Common, Woodland. Collected on Paint Lick Creek on Highway 1295. Also collected by R.L. Thompson 12-323 (BEREA) at Maywoods.

****Ranunculus acris* L.**, R.L. Thompson 04-195 (BEREA), Palisades, Uncommon, Mesic, Ruderal. Collected at Camp Nelson Quarry.

***Ranunculus bulbosus* L., W.W. Overbeck 453, 1197 (EKY), Dolomitic Foothills, Abundant, Mesic to Xeric, Ruderal. Collected at Reynolds Prairie. Also collected at Camp Nelson Quarry by R.L. Thompson 12-340 (BEREA).

Ranunculus fascicularis Muhl. ex Bigelow, W.W. Overbeck 1636 (EKY), Dolomitic Foothills, Rare, Mesic, Woodland. Collected at Reynolds Prairie in Mesic Forest growing with *Danthonia spicata*.

Ranunculus hispidus Michx., W.W. Overbeck 1120 (EKY), Knobs, Uncommon, Mesic to Hydric, Woodland. Collected at Maywoods. Also collected at Maywoods by Donna A. Godbey 69 (EKY).

Ranunculus micranthus Nutt., W.W. Overbeck 220 (EKY), Eden Hills, Common, Mesic, Woodland. Collected on Paint Lick Creek at Highway 52.

Ranunculus recurvatus Poir., Mary E. Wharton 9712 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at White Oak Creek.

Thalictrum dioicum L., W.W. Overbeck 1128 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods. Also collected at Maywoods by Donna A. Godbey 642 (EKY).

Thalictrum revolutum DC., W.W. Overbeck 1268 (EKY), Inner Bluegrass, Rare, Mesic to Hydric, Woodland. Collected on Highway 1355 along a stream.

Rhamnaceae

Ceanothus americanus L., W.W. Overbeck 497, 1430 (EKY), Palisades, Rare, Mesic to Xeric, Woodland. Collected at Tom Dorman Nature Preserve above White Oak Creek in Sub-xeric Forest.

Rhamnus caroliniana Walter, W.W. Overbeck 513, 537, 973, 1504, 1462 (EKY), Palisades, Outer Bluegrass, Dolomitic Foothills, Knobs, Uncommon, Mesic to Xeric, Woodland. Collected at Tom Dorman State Nature Preserve, Poor House Road, Reynolds Prairie, Narrow Gap Road, and at Maywoods.

**Rhamnus davurica* Pallas, W.W. Overbeck 931, 1083, 1221 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve and Highway 39 at the Kentucky River.

Rosaceae

Agrimonia parviflora Aiton, Donna A. Godbey 496 (EKY), Knobs, Common, Hydric, Grassland. Collected at Maywoods in riparian floodplain below the dam.

Agrimonia pubescens Wallr., W.W. Overbeck 641, 1394, 1410, 1577 (EKY), Palisades, Dolomitic Foothills, Knobs, Common, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve, Reynolds Prairie, Harmon's Lick Road, and at Maywoods.

Agrimonia rostellata Wallr., W.W. Overbeck 666, 725b (EKY), Palisades, Knobs, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve and at Maywoods.

Amelanchier arborea (F. Michx.) Fernald, W.W. Overbeck 348 (EKY), Knobs, Uncommon, Mesic to Xeric, Woodland. Collected at Maywoods.

Aruncus dioicus (Walter) Fernald, Donna A. Godbey 99 (EKY), Knobs, Rare, Mesic, Woodland. Collected at Maywoods.

**Chaenomeles speciosa* (Sweet) Nakai, W.W. Overbeck 1060 (EKY), Knobs, Uncommon, Mesic, Ruderal. Collected at the end of Jones Road growing with *Kerria japonica*.

Crataegus calpodendron (Ehrh.) Medik., W.W. Overbeck 1463 (EKY), Knobs, Rare, Mesic to Hydric, Woodland. Collected at Maywoods.

Crataegus crus-galli L., W.W. Overbeck 1239 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve. Also collected at Maywoods by Donna A. Godbey 351 (EKY).

Crataegus mollis (Torr. and A. Gray) Scheele, W.W. Overbeck 1616 (EKY), Dolomitic Foothills, Rare, Mesic to Hydric, Woodland. Collected on Stingy Creek Road growing with *Quercus macrocarpa*.

Crataegus pruinosa (H.L. Wendl.) K. Koch, W.W. Overbeck 1490 (EKY), Palisades, Rare, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve.

Crataegus viridis L., W.W. Overbeck 1579 (EKY), Palisades, Rare, Mesic, Woodland. Collected at Sally Brown Preserve.

***Duchesnea indica* (Andr.) Focke, W.W. Overbeck 319 (EKY), Eden Hills, Frequent, Mesic, Ruderal. Collected at Scott's Fork of Sugar Creek.

Fragaria virginiana Duchesne, W.W. Overbeck 300, 1214 (EKY), Eden Hills, Dolomitic Foothills, Common, Mesic to Xeric, Grassland. Collected at Scott's fork of Sugar Creek and at Reynolds Prairie. Also observed in the Canoe Creek vicinity on Camp Nelson Road.

Geum canadense Jacq., Donna A. Godbey 415 (EKY), Knobs, Common, Mesic, Woodland. Collected at Maywoods.

Geum vernum (Raf.) Torr. & A. Gray, W.W. Overbeck 298 (EKY), Eden Hills, Common, Mesic to Hydric, Woodland. Collected on Scott's Fork of Sugar Creek. Also collected by R.L. Thompson 12-339 (BEREA) at Maywoods.

**Kerria japonica* (L.) DC., W.W. Overbeck 479 (EKY), Knobs, Uncommon, Mesic, Ruderal. Collected at the end of Jones Road.

Malus angustifolia (Aiton) Michx., W.W. Overbeck 1129 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Malus coronaria (L.) P. Mill., W.W. Overbeck 1111, 1330 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected on Brock Road at the intersection of Starnes Road.

**Malus pumila* P. Mill., W.W. Overbeck 698 (EKY), Eden Hills, Uncommon, Mesic, Ruderal. Collected on Highway 1295 near Paint Lick Creek.

Physocarpus opulifolius (L.) Maxim., W.W. Overbeck 1723 (EKY), Palisades, Rare, Hydric, Woodland. Collected on the Dix River upstream from Highway 52.

Porteranthus stipulatus (Muhl. ex Willd.) Britton, E. Blake 80 (EKY), Knobs, Uncommon, Mesic to Xeric, Woodland. Collected at Maywoods.

Potentilla canadensis L., W.W. Overbeck 355, 814 (EKY), Outer Bluegrass, Knobs, Uncommon, Mesic to Xeric, Woodland. Collected along Paint Lick Creek at Highway 52 and at Maywoods.

Potentilla norvegica L., W.W. Overbeck 322 (EKY), Eden Hills, Uncommon, Mesic, Woodland. Collected at Scott's Fork of Sugar Creek. Also collected by Donna A. Godbey 420 (EKY) at Maywoods.

***Potentilla recta* L., W.W. Overbeck 410, 469, 1194 (EKY), Palisades, Knobs, Uncommon, Mesic to Xeric, Ruderal. Collected at Sally Brown Preserve, Hamilton Valley Road, and Maywoods. Also collected at Camp Nelson Quarry by R.L. Thompson 97-439 (BEREA).

Potentilla simplex Michx., W.W. Overbeck 460 (EKY), Uncommon, Mesic to Xeric, Grassland. Collected at Maywoods. Also collected at Maywoods by Donna A. Godbey 87 (EKY).

Prunus americana Marshall, W.W. Overbeck 1113, 1349, 1570 (EKY), Palisades, Outer Bluegrass, Mesic to Xeric, Woodland. Collected at Tom Dorman State Nature Preserve and on Hwy 1972 near Highway 52.

**Prunus avium* (L.) L., W.W. Overbeck 231 (EKY), Uncommon, Mesic, Ruderal. Collected on Highway 563 near Highway 39.

***Prunus mahaleb* L., W.W. Overbeck 307, 906, 933, 1090 (EKY), Palisades, Eden Hills, Dolomitic Foothills, Uncommon, Mesic, Ruderal. Collected at Tom Dorman State Nature Preserve, Highway 563 near Highway 39, Scott's fork of Sugar Creek, and Old Richmond Road near Highway 1972. Also collected at Camp Nelson Quarry by R.L. Thompson 12-580 (BEREA).

Prunus mexicana S.Watson, W.W. Overbeck 311, 753, 1067, 1110 (EKY), Palisades, Eden Hills, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve, and Long Branch Road, Scott's Fork of Sugar Creek.

Prunus munsoniana W. Wight & Hedrick, W.W. Overbeck 465 (EKY), Dolomitic Foothills, Rare, Mesic to Xeric, Grassland. Collected on the South segment Old Richmond Road.

**Prunus persica* (L.) Batsch, W.W. Overbeck 230 (EKY), Eden Hills, Uncommon, Mesic, Ruderal. Collected on Highway 563.

Prunus serotina Ehrh., W.W. Overbeck 433 (EKY), Knobs, Common, Mesic, Woodland. Collected at Maywoods. Observed throughout the county on woodland edges.

***Pyrus calleryana* Decne., Doty M. Mason with Jerry McQuerry 04 (EKY), Outer Bluegrass, Frequent, Mesic, Ruderal. Collected at Paint Lick.

***Rhodotypos scandens* (Thunb.) Makino, W.W. Overbeck 1542 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected on a steep slope above the Dix River at Lake Herrington.

**Rosa canina* L., Mary E. Wharton 10348 (KY), Palisades, Uncommon, Mesic, Ruderal. Collected at White Oak Creek.

Rosa carolina L., W.W. Overbeck 728 (EKY), Palisades, Uncommon, Mesic to Xeric, Woodland. Collected at Tom Dorman State Nature Preserve.

***Rosa multiflora* Thunb. ex Murr., W.W. Overbeck 1611 (EKY), Knobs, Frequent, Ruderal. Collected at Maywoods. Also observed throughout the county.

Rosa setigera Michx., W.W. Overbeck 530 (EKY), Knobs, Uncommon, Mesic to Hydric, Woodland. Collected on Narrow Gap Road.

**Rosa wichuraiana* Crépin, W.W. Overbeck 490 (EKY), Knobs, Uncommon, Mesic, Ruderal. Collected on Jones Road near a homestead.

Rubus allegheniensis Porter, R.L. Thompson 12-313 (BEREA), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Rubus argutus Link, Donna A. Godbey 297 (EKY), Knobs, Frequent, Mesic, Woodland. Collected at Maywoods.

Rubus flagellaris Willd., W.W. Overbeck 429, 1166, 1222 (EKY), Palisades, Dolomitic Foothills, Knobs, Uncommon, Mesic to Xeric, Grassland. Collected at Tom Dorman State Nature Preserve, White Lick Road, and at Maywoods. Also collected at Maywoods by R.L. Thompson 12-309 (BEREA).

Rubus occidentalis L., W.W. Overbeck 432 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods. Collected at Camp Nelson Quarry too by R.L. Thompson 00-737 (BEREA).

Rubus pensilvanicus Poir., W.W. Overbeck 1263 (EKY), Palisades, Uncommon, Mesic to Xeric, Woodland. Collected at Tom Dorman State Nature Preserve.

Rubus trivialis Michx., W.W. Overbeck 1280 (EKY), Knobs, Uncommon, Mesic to Xeric, Woodland. Collected at Maywoods.

Rubiaceae

Cephalanthus occidentalis L., W.W. Overbeck 1549 (EKY), Palisades, Uncommon, Hydric, Woodland. Collected along the Dix River.

Diodia teres Walter, W.W. Overbeck 588 (EKY), Knobs, Uncommon, Xeric, Grassland. Collected at Maywoods.

Diodia virginiana L., W.W. Overbeck 699, 959 (EKY), Palisades, Eden Hills, Uncommon, Hydric, Woodland. Collected at Highway 52 along the Dix River and Highway 1295 along Paint Lick Creek.

Galium aparine L., W.W. Overbeck 353 (EKY), Knobs, Common, Mesic, Woodland. Collected at Maywoods. Also collected at Camp Nelson Quarry by R.L. Thompson 97-444 (BEREA).

Galium circaezans Michx., W.W. Overbeck 576 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods

Galium concinnum Torr. & A. Gray, W.W. Overbeck 526 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods. Also collected at Maywoods by Donna A. Godbey 251 (EKY).

***Galium pedemontanum* (Bellardi) All., W.W. Overbeck 374 (EKY), Palisades, Frequent, Xeric, Ruderal. Collected in gravel roadside at Sally Brown Preserve. Also collected at Maywoods by R.L. Thompson 12-334, 12-609 (BEREA).

Galium pilosum Aiton, W.W. Overbeck 913 (EKY), Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected on Old Richmond Road near Highway 1972 in Xeric Limestone Prairie.

Galium triflorum Michx., W.W. Overbeck 580, 643, 735, 1493 (EKY), Palisades, Dolomitic Foothills, Knobs, Common, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve, Reynolds Prairie, and Maywoods.

Hedyotis nigricans (Lam.) Fosberg, W.W. Overbeck 720, 1426, 1500 (EKY), Palisades, Uncommon, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve. Also observed at Reynolds Prairie.

Houstonia caerulea L., W.W. Overbeck 210, 766 (EKY), Knobs, Common, Xeric, Woodland. Collected at Maywoods.

Houstonia canadensis Willd. ex Roem. & Schult., W.W. Overbeck 420, 1158 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected on Highway 3246 (Hamilton Valley Road) and at Maywoods.

Houstonia purpurea L., W.W. Overbeck 459 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods. Also collected at Maywoods by Donna A. Godbey 301 (EKY).

Mitchella repens L., Donna A. Godbey 242 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Rutaceae

Ptelea trifoliata L., W.W. Overbeck 1319, 1521 (EKY), Dolomitic Foothills, Rare, Mesic, Woodland. Collected at Reynolds Prairie in Mesic Forest.

Zanthoxylum americanum P. Mill., W.W. Overbeck 1203, Dolomitic Foothills, Rare, Mesic to Hydric, Woodland. Collected at Reynolds Prairie on stream margins and woodland edges.

Salicaceae

***Populus alba* L., W.W. Overbeck 321 (EKY), Eden Hills, Uncommon, Mesic, Woodland. Collected at Scott's Fork of Sugar Creek. Also observed on Narrow Gap Road and Dripping Springs Road.

Populus grandidentata Michx., W.W. Overbeck 964 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Salix caroliniana Michx., W.W. Overbeck 947, 1148 (EKY), Palisades, Knobs, Uncommon, Hydric, Grassland. Collected on cobble bars of the Dix River and on White Lick Creek at White Lick Church on Highway 954 (Cartersville Road).

Salix exigua Nutt., W.W. Overbeck 312, 545, 812, 959 (EKY), Palisades, Eden Hills, Outer Bluegrass, Frequent, Hydric, Grassland. Collected at the Dix River, Paint Lick Creek, Jack Black Road at Highway 563, and at Scott's Fork of Sugar Creek. Also observed at Maywoods.

Salix humilis Marshall, W.W. Overbeck 1308 (EKY), Knobs, Rare, Mesic to Hydric, Grassland. Collected on Gabbard Road near Crane Branch of Copper Creek.

Salix nigra Marshall, W.W. Overbeck 604 (EKY), Knobs, Common, Hydric, Woodland. Collected at Maywoods. Also collected at Camp Nelson Quarry by R.L. Thompson 97-118 (BEREA) and Maywoods by Donna A. Godbey 357 (EKY).

Salix sericea Marshall, W.W. Overbeck 589, 1309, 1365 (EKY), Knobs, Uncommon, Hydric, Grassland. Collected on Gabbard Road, White Lick Creek, and at Maywoods.

Saururaceae

Saururus cernuus L., W.W. Overbeck 955 (EKY), Palisades, Rare, Aquatic. Collected along the Dix River upstream from Highway 52.

Saxifragaceae

Heuchera americana L., W.W. Overbeck 1255 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected in Calcareous Mesophytic Forest along the Dix River upstream from Highway 52.

Heuchera villosa Michx., W.W. Overbeck 694 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected on limestone cliffs along the Dix River upstream from Highway 52.

Mitella diphylla L., Mary E. Wharton 9717 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at White Oak Creek.

Penthorum sedoides L., W.W. Overbeck 945 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected along the Dix River on floodplains upstream from Highway 52. Also collected at Camp Nelson Quarry by R.L. Thompson 03-873 (BEREA).

Saxifraga virginiana Michx., W.W. Overbeck 167 (EKY), Eden Hills, Mesic, Woodland. Collected at the confluence of Long Branch and Paint Lick Creek growing on a limestone outcrop with *Thalictrum dioicum*, *Arabis laevigata*, *Erythronium americanum*, *Trillium sessile*, *Corydalis flavula*, and *Elymus villosus*.

Tiarella cordifolia L., J.L. Gentry, Jr. 1257 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at White Oak Creek.

Scrophulariaceae

!*Agalinis skinneriana* (Wood) Britton, W.W. Overbeck 980 (EKY), Knobs, Rare, Xeric, Grassland. Collected at the end of Jones Road.

Agalinis tenuifolia (Vahl) Raf., W.W. Overbeck 1469 (EKY), Knobs, Uncommon, Mesic to Xeric, Grassland. Collected at Maywoods.

Aureolaria laevigata (Raf.) Raf., W.W. Overbeck 775 (EKY), Knobs, Uncommon, Mesic to Xeric, Woodland. Collected at Maywoods.

Aureolaria virginica (L.) Pennell, W.W. Overbeck 629 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected on Hamilton Valley Road between Maywoods Road and Dripping Springs Road. Also collected at Maywoods by J. Stuart Lassetter 2535 (EKY).

**Chaenorhinum minus* (L.) Lange, R.L. Thompson 12-533 (BEREA), Palisades; Rare, Xeric, Ruderal. Collected along Highway 27 at mile marker 16.

Collinsia verna Nutt., W.W. Overbeck 1093 (EKY), Eden Hills, Rare, Mesic to Hydric, Woodland. Collected on Paint Lick Creek at Highway 52.

Gratiola neglecta Torr., R.L. Thompson 03-402 (BEREA), Palisades, Uncommon, Hydric, Ruderal. Collected at Camp Nelson Quarry.

Gratiola virginiana L., Donna A. Godbey 543 (EKY), Knobs, Uncommon, Hydric, Woodland. Collected at Maywoods.

Leucospora multifida (Michx.) Nutt., W.W. Overbeck 695 (EKY), Palisades, Uncommon, Hydric, Woodland. Collected on the Dix River floodplain near Highway 52. Also collected by R.L. Thompson 03-878 (BEREA) at Camp Nelson Quarry.

Lindernia dubia (L.) Pennell, R.L. Thompson 03-871 (BEREA), Palisades, Uncommon, Hydric, Ruderal. Collected at Camp Nelson Quarry.

Pedicularis canadensis L., Donna A. Godbey 32 (EKY), Knobs, Uncommon, Mesic to Hydric, Woodland. Collected at Maywoods.

Penstemon brevisepalus Pennell, Donna A. Godbey 198 (EKY), Knobs, Uncommon, Xeric, Grassland. Collected at Maywoods.

Penstemon digitalis Nutt. ex Sims, W.W. Overbeck 1300 (EKY), Knobs, Uncommon, Mesic to Hydric, Grassland. Collected on Jones Road at the intersection of Gabbard Road growing with *Eupatorium fistulosum* and *Pycnanthemum tenuifolium*.

Penstemon hirsutus (L.) Willd., W.W. Overbeck 452, 1257, 1633 (EKY), Palisades, Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected on Paper Mill Road on a limestone outcrop and at Reynolds Prairie in Xeric Limestone Prairie.

Penstemon laevigatus Aiton, W.W. Overbeck 1254, 1499 (EKY), Palisades, Uncommon, Mesic to Hydric, Woodland. Collected at Tom Dorman State Nature Preserve and along the Dix River upstream from Highway 52.

Scrophularia marilandica L., W.W. Overbeck 852 (EKY), Palisades, Uncommon, Mesic to Hydric, Woodland. Collected at Sally Brown Preserve.

***Verbascum thapsus* L., R.L. Thompson 00-366 (BEREA), Palisades, Uncommon, Mesic to Xeric, Ruderal. Collected at Camp Nelson Quarry. Also collected at Maywoods by Donna A. Godbey 417 (EKY).

**Veronica agrestis* L., W.W. Overbeck 195 (EKY), Palisades, Common, Mesic to Xeric, Ruderal. Collected at the Kings Mill Road boat launch on Herrington Lake.

**Veronica anagallis-aquatica* L., R.L. Thompson 03-855 (BEREA), Palisades, Uncommon, Hydric, Ruderal. Collected at Camp Nelson Quarry.

**Veronica arvensis* L., R.L. Thompson 04-201 (BEREA), Palisades, Common, Xeric, Ruderal. Collected at Camp Nelson Quarry.

**Veronica hederifolia* L., W.W. Overbeck 169 (EKY), Eden Hills, Common, Ruderal. Collected on Long Branch Road.

**Veronica officinalis* L., W.W. Overbeck 1223 (EKY), Palisades, Uncommon, Mesic, Ruderal. Collected at Tom Dorman State Nature Preserve. Also collected at Maywoods by Donna A. Godbey 142 (EKY).

Veronica peregrina L., W.W. Overbeck 1235 (EKY), Palisades, Common, Mesic, Ruderal. Collected at Sally Brown Preserve Also collected at White Oak Creek by Mary E. Wharton 9700 (EKY), as well as Camp Nelson Quarry by R.L. Thompson 04-198 (BEREA) and Maywoods by R.L. Thompson 12-333 (BEREA).

**Veronica polita* Fries, R.L. Thompson 97-189 (BEREA), Palisades, Uncommon, Mesic, Ruderal. Collected at Camp Nelson Quarry.

**Veronica serpyllifolia* L., W.W. Overbeck 762 (EKY), Knobs, Common, Mesic, Ruderal. Collected at Maywoods.

Veronicastrum virginicum (L.) Farw., J. Campbell s.n. (KY), Palisades, Rare, Mesic, Woodland. Collected at White Oak Creek.

Simaroubaceae

***Ailanthus altissima* (P. Mill.) Swingle, W.W. Overbeck 405, 1292 (EKY), Palisades, Outer Bluegrass, Mesic, Woodland. Collected on Oscar Ray Road and at Sally Brown Preserve. Also observed at Tom Dorman State Nature Preserve and across the county in disturbed places.

Solanaceae

**Datura stramonium* L., Donna A. Godbey 381 (EKY), Knobs, Uncommon, Mesic, Ruderal. Collected at Maywoods

Physalis heterophylla Nees., W.W. Overbeck 950 (EKY), Palisades, Uncommon, Mesic to Hydric, Woodland. Collected along the Dix River upstream of Highway 52. Also collected at Maywoods by Donna A. Godbey 326 (EKY).

Physalis longifolia Nutt., W.W. Overbeck 854, 1664 (EKY), Palisades, Outer Bluegrass, Uncommon, Mesic, Woodland. Collected on White Lick Creek at White Lick Road near Highway 52. Also collected at Maywoods by Donna A. Godbey 327 (EKY).

Physalis philadelphica Lam., W.W. Overbeck 551 (EKY), Dolomitic Foothills, Uncommon, Mesic to Xeric, Grassland. Collected at Reynolds Prairie.

Physalis virginiana P. Mill., Donna A. Godbey 206 (EKY), Knobs, Uncommon, Xeric, Woodland. Collected at Maywoods on a ridgetop.

Solanum carolinense L., W.W. Overbeck 746 (EKY), Palisades, Common, Mesic, Ruderal. Collected at Tom Dorman State Nature Preserve.

Solanum ptycanthum Dunal ex DC, R.L. Thompson 00-738 (BEREA), Palisades, Uncommon, Mesic, Ruderal. Collected at Camp Nelson Quarry.

Staphyleaceae

Staphylea trifolia L., W.W. Overbeck 318, 623, 878, 1073 (EKY), Palisades, Eden Hills, Knobs, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve, Scott's Fork of Sugar Creek, Hamilton Valley Road and at Maywoods.

Thymelaeaceae

Dirca palustris L., Mary E. Wharton 9586 (KY), Palisades, Rare, Mesic to Hydric, Woodland. Collected on White Oak Creek.

Tiliaceae

Tilia americana L., W.W. Overbeck 397, 829, 1088, 1108, 1276, 1581 (EKY), Palisades, Eden Hills, Uncommon, Mesic, Woodland. Collected on Long Branch Road, Sad Road, and at Sally Brown Preserve in Calcareous Mesophytic Forest.

Ulmaceae

Celtis occidentalis L., W.W. Overbeck 1149, 1460 (EKY), Dolomitic Foothills, Knobs, Abundant, Mesic, Woodland. Collected at Reynolds Prairie and on Narrow Gap Road. Also observed throughout the county, especially on limestone.

Celtis tenuifolia Nutt., W.W. Overbeck 838, 1417 (EKY), Palisades, Uncommon, Mesic to Xeric, Woodland. Collected at Tom Dorman State Nature Preserve and Sally Brown Preserve. Also collected at Camp Nelson Quarry by R.L. Thompson 03-848 (BEREA).

Ulmus alata Michx., W.W. Overbeck 1397 (EKY), Knobs, Uncommon, Mesic to Xeric, Woodland. Collected on Harmon's Lick Road between Maywoods Road and Dripping Springs Road.

Ulmus americana L., W.W. Overbeck 179, 226, 830, 1085 (EKY), Palisades, Eden Hills, Frequent, Mesic to Hydric, Woodland. Collected at Sally Brown Preserve, Ross Road, Highway 39 at the Kentucky River, and Teatersville Road.

Ulmus rubra Muhl., W.W. Overbeck 197, 232, 1072 (EKY), Palisades, Eden Hill, Uncommon, Mesic, Woodland. Collected at Polly's Bend Road, Scott's Fork of Sugar Creek, and Tom Dorman State Nature Preserve.

Ulmus thomasi Sarg., W.W. Overbeck 1433 (EKY), Palisades, Rare, Mesic to Xeric, Woodland. Collected at Tom Dorman State Nature Preserve on limestone cliffs above White Oak Creek near the Kentucky River.

Urticaceae

Boehmeria cylindrica (L.) Sw., W.W. Overbeck 810, 885 (EKY), Palisades, Knobs, Uncommon, Hydric, Woodland. Collected along the Dix River and at Maywoods.

Laportea canadensis (L.) Weddell, W.W. Overbeck 1585 (EKY), Palisades, Uncommon, Hydric, Woodland. Collected at Sally Brown Preserve on the floodplain of the Kentucky River.

Pilea pumila (L.) A. Gray, W.W. Overbeck 680 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected along the Dix River. Also by R.L. Thompson 03-852 (BEREA) at Camp Nelson Quarry.

Urtica chamaedryoides Pursh, W.W. Overbeck 388 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Sally Brown Preserve in Mesic Forest.

Valerianaceae

Valeriana pauciflora Michx., Mary E. Wharton 9868 (KY), Palisades, Rare, Mesic, Woodland. Collected at White Oak Creek.

Valerianella chenopodiifolia (Pursh) DC., W.W. Overbeck 1173 (EKY), Outer Bluegrass, Common, Mesic, Woodland. Collected on Highway 1972.

Valerianella radiata (L.) Dufr., R.L. Thompson 12-336 (BEREA), Knobs, Common, Mesic, Woodland. Collected at Maywoods.

Valerianella umbilicata (Sullivant) Wood, W.W. Overbeck 1082, 1181 (EKY), Palisades, Dolomitic foothills, Frequent, Mesic, Woodland. Collected on Highway 39 at the Kentucky River and at Reynolds Prairie. Also collected at Camp Nelson Quarry by R.L. Thompson 00-49 (BEREA).

Verbenaceae

Phyla lanceolata (Michx.) Greene, W.W. Overbeck 949, 1345 (EKY), Palisades, Uncommon, Hydric, Woodland. Collected at Tom Dorman State Nature Preserve along the Kentucky River and at the Dix River upstream from Highway 52.

Verbena simplex Lehm., W.W. Overbeck 553 (EKY), Dolomitic Foothills, Uncommon, Xeric, Grassland. Collected at Reynolds Prairie in Xeric Limestone Prairie. Also collected at White Oak Creek by Mary E. Wharton 10096 (KY).

Verbena urticifolia L., W.W. Overbeck 622, Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods. Also collected at Camp Nelson Quarry by R.L. Thompson 00-748 (BEREA).

Violaceae

Hybanthus concolor (T.F. Forst.) Spreng., W.W. Overbeck 1104 (EKY), Palisades, Rare, Mesic, Woodland. Collected at Sally Brown Preserve.

Viola blanda Willd., W.W. Overbeck 338 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Viola canadensis L., Mary E. Wharton 9713 (EKY), Palisades, Common, Mesic, Woodland. Collected at White Oak Creek. Also collected at Maywoods by Donna A. Godbey 197 (EKY).

Viola palmata L., W.W. Overbeck 343, 1135 (EKY), Knobs, Uncommon, Mesic, Woodland. Collected at Maywoods.

Viola pedata L., W.W. Overbeck 1059, 1115 (EKY), Knobs, Rare, Xeric, Grassland. Collected at the end of Jones Road.

Viola primulifolia L., W.W. Overbeck 1130 (EKY), Knobs, Rare, Hydric, Grassland. Collected at Maywoods.

Viola pubescens Aiton, W.W. Overbeck 236, 1076 (EKY), Palisades, Eden Hills, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve and along Scott's Fork of Sugar Creek.

Viola rafinesquii Greene, W.W. Overbeck 308, 1097, 1099 (EKY), Palisades, Eden Hills, Uncommon, Mesic to Xeric, Ruderal. Collected at Sally Brown Preserve and Scott's Fork of Sugar Creek. Also collected at Maywoods by R.L. Thompson 12-322 (BEREA).

!*Viola septemloba* LeConte subsp. *egglestonii* (Brainerd) L.E. McKinney, J. Campbell, s.n. (KY), Palisades, Rare, Xeric, Grassland. Collected at Tom Dorman State Nature Preserve.

Viola sororia Willd., W.W. Overbeck 177, 218, 350, 1064, 1074, 1075, (EKY). Palisades, Eden Hills, Knobs, Abundant, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve, Highway 39 at the Kentucky River, Highway 1295 at Paint Lick Creek, and at Maywoods.

Viola striata Aiton, W.W. Overbeck 217, 379 (EKY), Palisades, Eden Hills, Uncommon, Mesic, Woodland. Collected along Paint Lick Creek at Highway 1295 and at Sally Brown Preserve. Also collected at Maywoods by Donna A. Godbey 156 (EKY) and R.L. Thompson 12-571 (BEREA).

Viscaceae

Phoradendron leucarpum (Raf.) Rev. & M.C. Johnston subsp. *leucarpum*, R.L. Thompson 04-17 (BEREA), Palisades, Common, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve where it was parasitic on *Carya ovata*. Thompson and Poindexter (2005) documented 12 host tree species from 8 families and 1740 trees infested with American mistletoe within Garrard County. All 12 host trees were vouchered with specimens. *Juglans nigra*, *Prunus serotina*, *Ulmus americana*, and *Robinia pseudoacacia*, accounted for 90% of all mistletoe-infested trees.

Vitaceae

Ampelopsis arborea (L.) Koehne, W.W. Overbeck 894, 1618 (EKY), Flatwoods, Rare, Mesic to Hydric, Woodland. Collected on Old Richmond Road between Good Hope Road and Lane Road growing with *Lobelia siphilitica* and *Eupatorium perfoliatum*.

Ampelopsis cordata Michx., R.L. Thompson 03-841 (BEREA), Palisades, Uncommon, Mesic, Ruderal. Collected at Camp Nelson Quarry.

Parthenocissus quinquefolia (L.) Planch., W.W. Overbeck 887 (EKY), Knobs, Frequent, Mesic, Woodland. Collected at Maywoods. Observed throughout the county.

Vitis aestivalis Michx., W.W. Overbeck 674, 932, 1464 (EKY), Palisades, Knobs, Common, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve and at Maywoods.

Vitis cinerea (Engelm.) Millard, W.W. Overbeck 1225 (EKY), Palisades, Uncommon, Mesic, Woodland. Collected at Tom Dorman State Nature Preserve.

Vitis vulpina L., W.W. Overbeck 957 (EKY), Palisades, Frequent, Mesic to Hydric, Woodland. Collected along the Dix River upstream of Highway 52.

APPENDIX II:

Exotic Pest Plants of Kentucky in Garrard County

Garrard County non-native plant species listed by KY EEP (2013) as Severe Threat, Significant Threat, Moderate Threat, or Watch List. Those currently listed as a Severe Threat are indicated by a “^.”

Species	Family
<i>^Ailanthus altissima</i>	Simaroubaceae
<i>Albizia julibrissin</i>	Fabaceae
<i>^Alliaria petiolata</i>	Brassicaceae
<i>Allium vineale</i>	Alliaceae
<i>Arcium minus</i>	Asteraceae
<i>Arenaria serpyllifolia</i>	Caryophyllaceae
<i>^Arthraxon hispidus</i>	Poaceae
<i>Barbarea vulgaris</i>	Brassicaceae
<i>Bromus inermis</i>	Poaceae
<i>Bromus japonicus</i>	Poaceae
<i>Bromus racemosus</i>	Poaceae
<i>Bromus tectorum</i>	Poaceae
<i>Buglossoides arvensis</i> (<i>Lithospermum arvense</i>)	Boraginaceae
<i>^Carduus nutans</i>	Asteraceae
<i>^Celastrus orbiculatus</i>	Celastraceae
<i>Centaurea maculosa</i> (<i>C. biebersteinii</i>)	Asteraceae
<i>Chenopodium ambrosioides</i>	Chenopodiaceae
<i>Chrysanthemum leucanthemum</i>	Asteraceae
<i>Cichorium intybus</i>	Asteraceae
<i>Cirsium vulgare</i>	Asteraceae
<i>^Clematis terniflora</i>	Ranunculaceae
<i>Commelina communis</i>	Commelinaceae
<i>^Conium maculatum</i>	Apiaceae
<i>^Coronilla varia</i>	Fabaceae
<i>Daucus carota</i>	Apiaceae
<i>^Dioscorea polystachya</i>	Dioscoreaceae
<i>Dipsacus fullonum</i> (<i>D. sylvestris</i>)	Dipsacaceae
<i>Dipsacus laciniatus</i>	Dipsacaceae
<i>Duchesnea indica</i>	Rosaceae
<i>Echinochloa crus-galli</i>	Poaceae
<i>^Elaeagnus umbellata</i>	Elaeagnaceae
<i>Eleusine indica</i>	Poaceae
<i>Eragrostis cilianensis</i>	Poaceae
<i>^Euonymus alatus</i>	Celastraceae
<i>^Euonymus fortunei</i>	Celastraceae
<i>^Festuca arundinacea</i>	Poaceae
<i>Galium pedemontanum</i>	Rubiaceae
<i>^Glechoma hederacea</i>	Lamiaceae
<i>Hedera helix</i>	Araliaceae
<i>Hesperis matronalis</i>	Brassicaceae
<i>Hibiscus syriacus</i>	Malvaceae
<i>Holcus lanatus</i>	Poaceae
<i>Hypericum perforatum</i>	Clusiaceae
<i>Ipomoea hederacea</i>	Convolvulaceae
<i>Lactuca saligna</i>	Asteraceae
<i>Lamium amplexicaule</i>	Lamiaceae
<i>Lamium purpureum</i>	Lamiaceae
<i>^Lespedeza cuneata</i>	Fabaceae

<i>^Lespedeza stipulacea</i>	Fabaceae
<i>Lespedeza striata</i>	Fabaceae
<i>^Ligustrum sinense</i>	Oleaceae
<i>Lolium perenne (L. multiflorum)</i>	Poaceae
<i>^Lonicera fragrantissima</i>	Caprifoliaceae
<i>^Lonicera japonica</i>	Caprifoliaceae
<i>^Lonicera maackii</i>	Caprifoliaceae
<i>^Lonicera standishii</i>	Caprifoliaceae
<i>^Lythrum salicaria</i>	Lythraceae
<i>Medicago lupulina</i>	Fabaceae
<i>^Melilotus alba</i>	Fabaceae
<i>^Melilotus officinalis</i>	Fabaceae
<i>Mentha × piperita</i>	Lamiaceae
<i>^Microstegium vimineum</i>	Poaceae
<i>^Miscanthus sinensis</i>	Poaceae
<i>Morus alba</i>	Moraceae
<i>Ornithogalum umbellatum</i>	Liliaceae
<i>Paspalum dilatatum</i>	Poaceae
<i>Pastinaca sativa</i>	Apiaceae
<i>Perilla frutescens</i>	Lamiaceae
<i>Poa annua</i>	Poaceae
<i>Poa compressa</i>	Poaceae
<i>Poa pratensis</i>	Poaceae
<i>Polygonum caespitosum</i>	Polygonaceae
<i>^Polygonum cuspidatum</i>	Polygonaceae
<i>Polygonum persicaria</i>	Polygonaceae
<i>Populus alba</i>	Salicaceae
<i>Potentilla recta</i>	Rosaceae
<i>Prunus mahaleb</i>	Rosaceae
<i>^Pueraria montana</i>	Fabaceae
<i>^Pyrus calleryana</i>	Rosaceae
<i>Ranunculus bulbosus</i>	Ranunculaceae
<i>Rhodotypos scandens</i>	Rosaceae
<i>^Rosa multiflora</i>	Rosaceae
<i>Rumex acetosella</i>	Polygonaceae
<i>Sonchus asper</i>	Asteraceae
<i>^Sorghum halepense</i>	Poaceae
<i>^Stellaria media</i>	Caryophyllaceae
<i>Thlaspi alliaceum</i>	Brassicaceae
<i>Thlaspi perfoliatum</i>	Brassicaceae
<i>Trifolium campestre</i>	Fabaceae
<i>Trifolium pratense</i>	Fabaceae
<i>Trifolium repens</i>	Fabaceae
<i>Verbascum thapsus</i>	Scrophulariaceae
<i>Vicia sativa</i>	Fabaceae
<i>Vicia villosa</i>	Fabaceae
<i>Vinca minor</i>	Apocynaceae
<i>Wisteria sinensis</i>	Fabaceae

APPENDIX III:

New Distribution Records for Maywoods

New plant taxa for Maywoods (not listed by Godbey 1984). Non-native species are indicated by an asterisk (*). KSNPC (2013) listed species are indicated by an exclamation point (!)

<i>Acalypha virginica</i>	<i>Carex lucorum</i> var. <i>australucorum</i>
<i>Agalinis tenuifolia</i>	<i>Carex lurida</i>
<i>Agrostis gigantea</i>	<i>Carex nigromarginata</i>
<i>Andropogon virginicus</i>	<i>Carex pensylvanica</i>
* <i>Anthoxanthum odoratum</i>	<i>Carex purpurifera</i>
<i>Asimina triloba</i>	<i>Carex rosea</i>
<i>Asplenium rhizophyllum</i>	<i>Carex styloflexa</i>
<i>Baptisia australis</i>	<i>Carex umbellata</i>
<i>Betula nigra</i>	<i>Carex willdenowii</i>
<i>Boehmeria cylindrica</i>	<i>Chimaphila maculata</i>
<i>Botrychium biternatum</i>	<i>Cornus drummondii</i>
<i>Calystegia sepium</i>	<i>Crataegus calpodendron</i>
<i>Cardamine pensylvanica</i>	* <i>Cyperus iria</i>
<i>Carex aestivalis</i>	<i>Desmodium ciliare</i>
<i>Carex digitalis</i>	<i>Desmodium glabellum</i>
<i>Carex festucacea</i>	<i>Dichanthelium acuminatum</i>
<i>Carex frankii</i>	<i>Dichanthelium depauperatum</i>
<i>Carex gracilescens</i>	<i>Diodia teres</i>
<i>Carex hirsutella</i>	<i>Eleocharis erythropoda</i>
<i>Carex laxiflora</i>	<i>Eragrostis pectinacea</i>
<i>Carex leavenworthii</i>	<i>Eragrostis spectabilis</i>

Erechtites hieraciifolia
Eurybia macrophylla
Eurybia surculosa
**Galinsoga quadriradiata*
Galium concinnum
Galium triflorum
Hedeoma hispida
Helianthus strumosus
Heliopsis helianthoides
Hypericum gentianoides
!*Juglans cinerea*
Juncus tenuis
**Kyllinga pumila*
**Lespedeza cuneata*
Lespedeza hirta
Lespedeza intermedia
Lespedeza procumbens
Linum virginianum
**Lonicera maackii*
Ludwigia palustris
**Microstegium vimineum*
**Najas minor*
Ophioglossum vulgatum
**Oxalis corniculata*
Packera anonyma
Panicum rigidulum
Paronychia canadensis
Phyllanthus caroliniensis
Poa autumnalis
**Poa pratensis*
Polygala sanguinea
Polygonum amphibium
Polygonum caespitosum
Polygonum hydropiperoides
Polygonum punctatum
Polygonum sagittatum
Polypodium virginianum
Potamogeton diversifolius
Potamogeton nodosus
**Potentilla recta*
Rhexia mariana
Rhynchospora capitellata
Rhynchospora glomerata
**Rosa multiflora*
Rubus occidentalis
Rubus trivialis
Sagittaria latifolia
Sanicula canadensis

Scleria oligantha
**Silene latifolia*
!Silphium pinnatifidum
Solidago gigantea
Solidago hispida
Sorghastrum nutans
Sphenopholis nitida
Sphenopholis obtusata
Staphylea trifolia
Symphyotrichum cordifolium
Symphyotrichum dumosum
**Thlaspi alliaceum*
Verbena urticifolia
Verbesina occidentalis
**Veronica serpyllifolia*
Vicia caroliniana
Woodwardia areolata

APPENDIX IV:

Photographs of Selected State-listed Species



Figure 12. *Agalinis skinneriana*, Jones Road, Garrard County, Kentucky. Photograph taken October 12, 2010.



Figure 13. Corolla of *Agalinis skinneriana*, Will W. Overbeck, collection 980 (EKY). Scale bar shows millimeters.



Figure 14. Capsule of *Agalinis skinneriana*, Will W. Overbeck, collection 980 (EKY). Scale bar shows millimeters.



Figure 15. Stem of *Agalinis skinneriana*, Will W. Overbeck, collection 980 (EKY). Scale bar shows millimeters.



Figure 16. *Elymus svensonii*, Tom Dorman State Nature Preserve, Garrard County, KY. Photograph taken September 21, 2012.



Figure 17. *Lonicera prolifera*, Felix Reynolds Prairie, Garrard County, Kentucky. Photograph taken May 13, 2011.



Figure 18. *Onosmodium hispidissimum*, Felix Reynolds Prairie, Garrard County, Kentucky. Photograph taken July 26, 2011.



Figure 19. *Phlox bifida* subsp. *stellaria*, Tom Dorman State Nature Preserve, Garrard County, Kentucky. Photograph taken March 25, 2012.



Figure 20. *Prenanthes crepidinea*, Sad Road, Garrard County, Kentucky. Photograph taken August 21, 2011.



Figure 21. *Schizachne purpurascens*, Sally Brown and Crutcher Preserve, Garrard County, Kentucky. Photograph taken March 13, 2012.



Figure 22. *Spiranthes magnicamporum*, Felix Reynolds Prairie, Garrard County, Kentucky. Photograph taken October 27, 2012.



Figure 23. *Viola septemloba* subsp. *egglestonii*, Tom Dorman State Nature Preserve, Garrard County, Kentucky. Photograph taken April 12, 2010.