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Vascular Plant Species Inventory of Richardson Bottoms Wildlife Viewing Area

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Introduction

Richardson Bottoms Wildlife Viewing Area, an upland marsh, is a unique community in the Ouachita Mountains. The area originally was a moist hardwood forest dominated by sweetgum (*Liquidambar styraciflua*) and pin oak (*Quercus palustris*) (David Saugey, pers. comm.). Weyerhaeuser Company logged the area in the early 1980s and replaced the trees with a loblolly pine (*Pinus taeda*) plantation. Beavers (*Castor canadensis*) made use of the pine saplings and built a series of dams along a seasonal stream leading into Irons Fork, creating the 40 ha (100 acre) wetland. The flooded land is now wet year-round and supports a suite of aquatic and wetland plant and animal species.

Richardson Bottoms is positioned on the Montgomery-Garland County line with an estimated 90% within Montgomery County and the remaining 10% in Garland County. The elevation of the site is 190 m (620 ft.). The surrounding region of the central Ouachita Mountains is characterized by a humid-subtropical climate and typically a mixed shortleaf pine (*Pinus echinata*), oak (*Quercus spp.*) and hickory (*Carya spp.*) forest or woodland (Bailey, 1995), making the small patch of original sweetgum and pin oak forest of the Richardson Bottoms area unusual in the region. Factors allowing for the original vegetation, logging and replacement with loblolly pine, and subsequent activity of beavers have created the wetland. With the development of the marshland, the Ouachita National Forest saw an opportunity to protect a habitat known nowhere else in the Ouachitas. Richardson Bottoms was designated as a Wildlife Viewing Area and provides habitat for migrating wetland bird species (David Saugey, pers. comm.). Bird surveys have been conducted on the site, but a description of the vegetation and a list of vascular plant species was lacking. The purpose of this study was to characterize and map vegetation zones in Richardson Bottoms and inventory the vascular plant species growing at the site.

Materials and Methods

A list of plant species was compiled by collecting voucher specimens throughout a full growing season (May-October). Voucher specimens were deposited at the University of Arkansas Herbarium. The site was visited in 2003 on 13 and 15 May, 16 and 17 June, 21 and 22 July, 5 and 6 September, and 17 October to inventory species. On each visit, coordinates were taken at different localities in

and near the Bottoms using a global positioning system (GPS), and notes were made on the vegetation growing at each GPS point. Later, the area was mapped and vegetation zones were drawn based on information from the field notes. Broader habitat types were defined, and each collection was assigned a habitat type from which it was collected.

Results

After thorough inventory, five habitat types were decided upon based on position to surrounding landscape, hydrology, and dominant vegetation patterns. The habitats recognized are roadside, wetland, island, pine plantation, and riparian. The "roadside" habitat is the strip of land between the gravel road that rings the Bottoms and the marsh. The area is characterized by dry, compact soil and vegetation of weedy herbs and shrubs. The plant species collected are typical of much roadside vegetation or of early successional species. The "wetland" areas are those that typify Richardson Bottoms. These are located from the shoreline inward, are saturated for most or all of the year, and include floating, submerged, and rooted herbaceous species, as well as some shrubs such as common buttonbush (*Cephalanthus occidentalis*). The "island" habitats are those, found on the few small islands within the marsh, of higher elevation influenced by wetland areas of the Bottoms. They have a tree canopy dominated by loblolly pine, but also include blackgum (*Nyssa sylvatica*), sweetgum, willow oak (*Quercus phellos*), and mockernut hickory (*Carya alba*). The islands are refugia of dry land within the marsh, but because of their proximity to permanent water, they contain a mix of wetland and upland species. The loblolly "pine plantation" areas are wet to moist, at the margins of the Bottoms where the road is not closely associated, and dominated by a dense canopy of strictly loblolly pine planted in rows. The "riparian" area refers to the land north of the Bottoms beyond the tallest dam where the stream flows into Irons Fork. Riparian habitat is streamside and consists of classically riparian species with a dense hardwood canopy of sweetgum, American sycamore (*Platanus occidentalis*), and white oak (*Quercus alba*) and an understory of hophornbeam (*Ostrya virginiana*), American hornbeam (*Carpinus caroliniana*), American hazelnut (*Corylus americana*), red maple (*Acer rubrum*), and giant cane (*Arundinaria gigantea*). The riparian habitat consists of a series of small dams and the banks of the stream. Mapped vegetation zones are more

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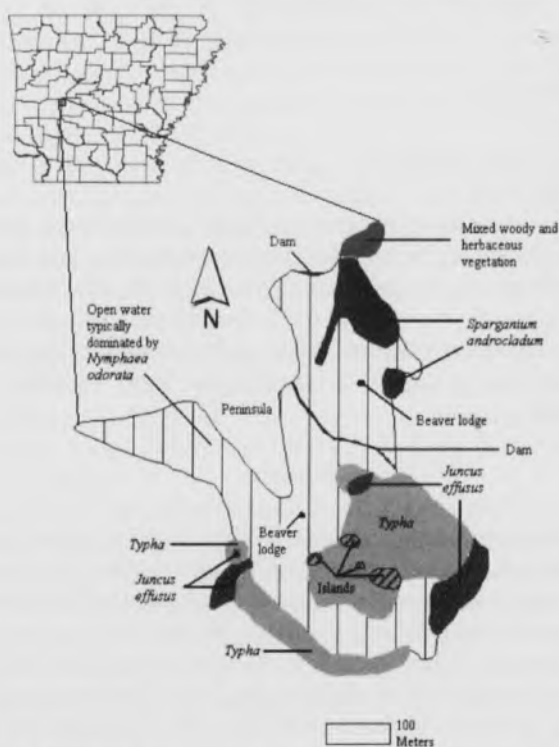


Fig. 1. Mapped vegetation zones of Richardson Bottoms Wildlife Viewing Area based on GPS coordinates.

specific than the five habitat types described above and only refer to the wetland areas at a finer scale (Fig. 1).

Three hundred and four collections were made at the site, representing 196 plant taxa from 155 genera and 80 families (Appendix I). Twenty-three percent of the species found are considered obligate wetland species (NWI, 1996). Nine wetland plant families uncommonly encountered in the Ouachita Mountains Natural Division are represented at Richardson Bottoms: Alismataceae, Cabombaceae, Haloragaceae, Lemnaceae, Lentibulariaceae, Nymphaeaceae, Potamogetonaceae, Sparganiaceae, and Typhaceae. The three most taxonomically diverse families are the Asteraceae with 18 species, Poaceae with 13 species, and Cyperaceae with 12 species represented. One species, waterpurslane (*Didiplis diandra*), is tracked by the Arkansas Natural Heritage Commission as sensitive and should be monitored. The species is rarely collected and is of uncertain distribution in Arkansas.

Discussion

The plant species list provided should serve as baseline data for future studies. It was found that much of the marsh is open water with sparse to dense areas of American white waterlily (*Nymphaea odorata*) and cattail (*Typha angustifolia*

and *T. latifolia*). Watershield (*Brasenia schreberi*) and humped bladderwort (*Utricularia gibba*) are other common aquatic species. Dense patches of common rush (*Juncus effusus*) have developed nearest the marsh edges. Swamp smartweed (*Polygonum hydropiperoides*), usually a rooted wetland species, forms dense floating mats in the Bottoms. Interestingly, half the asteraceous species collected were found in the roadside habitat and so have little to do with the marshland directly. However, all the sedges (*Cyperaceae*) were found in either the wetland areas or the riparian habitats.

Since this system is maintained by the actions of beavers, it is surely dynamic and should be monitored for future changes in vegetation patterns. The classification of habitat types and vegetation zones was created specifically for this small, unique ecological system. It allows enough resolution to track future dominant vegetation extent changes, while broadly characterizing the area into five recognizable habitat categories. It must be noted that while Richardson Bottoms is a biological novelty in the Ouachita Mountains, its origins are not completely natural; it was created by beavers after a series of anthropogenic land use changes. Therefore, it makes an interesting study opportunity for those ecologists interested in biological colonization and invasion of new habitats. It was observed that aquatic insects were abundant and diverse, and non-insect invertebrates were also common. The Ouachita National Forest originally protected the area for its value as a wetland bird habitat, but it serves as a unique botanical community as well. Continued monitoring and further studies of Richardson Bottoms are warranted.

ACKNOWLEDGMENTS.—I am grateful to David Saugey and the Jessieville-Winona Ranger District of the Ouachita National Forest (ONF) for approaching me and providing the opportunity to work on this project. The research was funded by the Jessieville-Winona Ranger District and the University of Arkansas Herbarium. I thank those who assisted in the field: Rob Doster, Sarah Nunn, and Matt Nutt; canoeing the bottoms while collecting plants could not have successfully been done alone. I appreciate David Saugey and Mike Bean for delivering the canoe to the study site and Donnie Robertson for assistance on the GIS maps provided to ONF. Dr. Johnnie Gentry, superstar Katie Marsico, and Sarah Nunn provided reviews and helpful comments for the manuscript. I thank an anonymous reviewer for comments that improved this work. I also thank Neil Vargas for his map-making expertise; he helped in improving Fig. 1.

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Appendix.--Species collected at Richardson Bottoms Wildlife Viewing Area in 2003. The list is alphabetical by family and then alphabetical by species within family. A voucher number is listed for each taxon and represents a collection number of T. D. Marsico and a specimen deposited at the University of Arkansas Herbarium. The habitat and wetland codes for each taxon are also listed. The habitat codes are as follows: roa=roadside, wet=wetland, isl=island, pin=pine plantation, and rip=riparian, and are given for all types in which an individual taxon was collected. The wetland codes are as follows: NI=no indicator (insufficient information to make a determination); OBL=obligate wetland (>0.99 probability of natural occurrence in wetlands); FACW=facultative wetland (0.67>0.99 probability of natural occurrence in wetlands, occasionally in non-

wetlands); FAC=facultative (0.34>0.66 probability in wetlands, i.e. equally occurring in wetlands or non-wetlands); FACU=facultative upland (0.01>0.33 probability in wetlands, i.e. mostly found in non-wetlands); UPL=obligate upland (<0.01 probability in wetlands, almost always in non-wetlands). An asterisk (*) indicates tentative assignment to wetland category based on limited information or conflicting review. A plus (+) indicates a frequency at the higher end of the category, while a minus (-) indicates a frequency at the lower end. Species without a wetland designation were not found on the National List (NWI, 1996). The wetland codes used here are those from the Southeast subregion of the National List (NWI, 1996). A carat (^) before the species name denotes a non-native taxon. Botanical nomenclature follows The PLANTS Database (USDA, NRCS, 2004).

Appendix I. Vascular Plant Species List.

Family	Species	Voucher No.	Habitat(s)	Wetland
Aceraceae	<i>Acer rubrum</i> L. var. <i>drummondii</i> (Hook. & Arn. ex Nutt.) Sarg.	4955	wet	OBL
	<i>Acer rubrum</i> L. var. <i>rubrum</i>	5035	isl, rip	FAC
Alismataceae	<i>Alisma subcordatum</i> Raf.	5539	wet	OBL
	<i>Sagittaria graminea</i> Michx. var. <i>graminea</i>	5485	wet	OBL
	<i>Sagittaria platyphylla</i> (Engelm.) J.G. Sm.	5771	wet	OBL
Anacardiaceae	<i>Rhus copallinum</i> L.	5997	roa	FACU-
	<i>Rhus glabra</i> L.	5534	roa	
	<i>Toxicodendron radicans</i> (L.) Kuntze	5970	pin, rip	FAC
Annonaceae	<i>Asimina triloba</i> (L.) Dunal	5447	rip	FAC
Apiaceae	<i>Cryptotaenia canadensis</i> (L.) DC.	5456	rip	FAC+
	<i>Eryngium prostratum</i> Nutt. ex DC.	5473	rip	FACW
	<i>Ptilimnium capillaceum</i> (Michx.) Raf.	5478	rip	OBL
	<i>Sanicula canadensis</i> L.	5503	isl	FACU
	<i>Trepocarpus aethusae</i> Nutt. ex DC.	5452	rip	FACW
Apocynaceae	<i>Apocynum cannabinum</i> L.	5533	roa	FAC-
	<i>Trachelospermum difforme</i> (Walt.) Gray	5521	roa	FACW
Aquifoliaceae	<i>Ilex opaca</i> Ait.	5467.5	rip	FAC-
	<i>Ilex vomitoria</i> Ait.	5733	pin	FAC
Araceae	<i>Arisaema dracontium</i> (L.) Schott	5506	isl	FACW
Asclepiadaceae	<i>Asclepias variegata</i> L.	5492	pin	FACU
Aspleniaceae	<i>Asplenium platyneuron</i> (L.) B.S.P.	5509	pin, roa	FACU

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Family	Species	Voucher No.	Habitat(s)	Wetland	
Asteraceae	<i>Ambrosia artemisiifolia</i> L.	5966	roa	FACU	
	<i>Bidens discoidea</i> (Torr. & Gray) Britt.	6044	roa	FACW	
	<i>Boltonia diffusa</i> Ell.	5986	roa	FAC	
	<i>Cirsium discolor</i> (Muhl. ex Willd.) Spreng.	6002	roa	UPL	
	<i>Eclipta prostrata</i> (L.) L.	5737	wet	FACW-	
	<i>Eupatorium perfoliatum</i> L. var. <i>perfoliatum</i>	5983	wet	FACW+	
	<i>Eupatorium serotinum</i> Michx.	6007	pin	FAC	
	<i>Helianthus divaricatus</i> L.	5524	roa		
	<i>Krigia biflora</i> (Walt.) Blake var. <i>biflora</i>	5041	isl	FACU	
	<i>Lactuca floridana</i> (L.) Gaertn.	6001	roa	FACU	
	<i>Pluchea camphorata</i> (L.) DC.	5979	wet	FACW	
	<i>Rudbeckia hirta</i> L.	5507	pin	FACU	
	<i>Solidago canadensis</i> L.	6024	roa	FACU	
	<i>Solidago rugosa</i> P. Mill.	6006	pin	FAC	
	<i>Symphiotrichum lateriflorum</i> (L.) A. & D. Löve	6026	roa	FAC	
	<i>Symphiotrichum pilosum</i> (Willd.) Nesom var. <i>pilosum</i>	6023	roa	FAC-	
	<i>Verbesina helianthoides</i> Michx.	5470	rip		
	<i>Xanthium strumarium</i> L.	5978	wet	FAC	
	Balsaminaceae	<i>Impatiens capensis</i> Meerb.	5977	wet	FACW
	Berberidaceae	<i>Podophyllum peltatum</i> L.	5515	isl	FACU
Betulaceae	<i>Betula nigra</i> L.	6038	wet	FACW	
	<i>Carpinus caroliniana</i> Walt.	5437	isl, rip	FAC	
	<i>Corylus americana</i> Walt.	5445	rip	FACU	
	<i>Ostrya virginiana</i> (P. Mill.) K. Koch	5467	rip	FACU-	
Bignoniaceae	<i>Campsis radicans</i> (L.) Seem. ex Bureau	6000	pin, roa	FAC	
Boraginaceae	<i>Myosotis verna</i> Nutt.	5038	isl	FAC-	
Callitrichaceae	<i>Callitriche heterophylla</i> Pursh ssp. <i>heterophylla</i>	5031	wet	OBL	
Campanulaceae	<i>Lobelia puberula</i> Michx.	6028	roa	FACW-	

Family	Species	Voucher No.	Habitat(s)	Wetland
Caprifoliaceae	[^] <i>Lonicera japonica</i> Thunb.	4971	isl, roa	FAC-
	<i>Sambucus nigra</i> L. ssp. <i>canadensis</i> (L.) R. Bolli	5525	wet, isl	FACW-
Caryophyllaceae	[^] <i>Dianthus armeria</i> L.	5490	roa	UPL
Ceratophyllaceae	<i>Ceratophyllum demersum</i> L.	5486	wet	OBL
Clusiaceae	<i>Hypericum mutilum</i> L.	5736	wet	FACW
	<i>Triadenum walteri</i> (J.G. Gmel.) Gleason	5984	wet	OBL
Commelinaceae	<i>Commelina virginica</i> L.	5738	wet	FACW
	<i>Tradescantia ohiensis</i> Raf.	5052	isl	FAC-
Cornaceae	<i>Cornus foemina</i> P. Mill.	5972	wet, isl	FACW-
Crassulaceae	<i>Penthorum sedoides</i> L.	5767	wet	OBL
Cupressaceae	<i>Juniperus virginiana</i> L. var. <i>virginiana</i>	5504	isl	FACU-
Cuscutaceae	<i>Cuscuta gronovii</i> Willd. ex J.A. Schultes	6020	roa	
	<i>Cuscuta pentagona</i> Engelm.	6022	roa	
Cyperaceae	<i>Carex crinita</i> Lam.	4967	wet, rip	FACW+
	<i>Carex flaccosperma</i> Dewey	5469	rip	FAC+
	<i>Carex frankii</i> Kunth	5481	rip	OBL
	<i>Carex intumescens</i> Rudge	4958	wet, rip	FACW
	<i>Carex lupulina</i> Muhl. ex Willd.	4959	wet	OBL
	<i>Carex lurida</i> Wahlenb.	5460	wet	OBL
	<i>Carex tribuloides</i> Wahlenb.	5494	wet	FACW+
	<i>Carex vulpinoidea</i> Michx.	5475	wet, rip	OBL
	<i>Cyperus pseudovegetus</i> Steud.	5747	wet	FACW
	<i>Eleocharis obtusa</i> (Willd.) J.A. Schultes	5976	wet	OBL
	<i>Rhynchospora corniculata</i> (Lam.) Gray	5988	wet	OBL
	<i>Scirpus cyperinus</i> (L.) Kunth	5731	wet	OBL
Dennstaedtiaceae	<i>Pteridium aquilinum</i> (L.) Kuhn var. <i>pseudocaudatum</i> (Clute) Heller	5510	roa	FACU
Dioscoreaceae	<i>Dioscorea villosa</i> L.	5442	rip	FACW
Dryopteridaceae	<i>Athyrium filix-femina</i> (L.) Roth ssp. <i>asplenoides</i> (Michx.) Hulten	5491	pin	NI
	<i>Polystichum acrostichoides</i> (Michx.) Schott	5479	isl, rip	FAC
Ebenaceae	<i>Diospyros virginiana</i> L.	5500	wet	FAC

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Ericaceae	<i>Lyonia ligustrina</i> (L.) DC.	5529	isl	FACW
	<i>Vaccinium virgatum</i> Ait.	5040	isl, rip	FACU
Euphorbiaceae	<i>Euphorbia corollata</i> L.	5519	roa	
	<i>Euphorbia dentata</i> Michx.	6004	roa	
Fabaceae	<i>Amorpha fruticosa</i> L.	4961	pin, roa	FACW
	<i>Apios americana</i> Medik.	5543	roa	FACW
	<i>Cercis canadensis</i> L. var. <i>canadensis</i>	5444	rip	FACU
	<i>Desmodium cuspidatum</i> (Muhl. ex Willd.) DC. ex Loud. var. <i>cuspidatum</i>	6021	roa	
	<i>Desmodium obtusum</i> (Muhl. ex Willd) DC.	6009	pin	
	<i>Gleditsia triacanthos</i> L.	4974	isl, roa	FAC
	^ <i>Kummerowia striata</i> (Thunb.) Schindl.	5965	roa	FACU
	^ <i>Lespedeza cuneata</i> (Dum.- Cours.) G. Don	5968	isl, roa	UPL
	<i>Strophostyles umbellata</i> (Muhl. ex Willd.) Britt.	5758	wet	FAC-
	Fagaceae	<i>Quercus alba</i> L.	5472	rip
<i>Quercus palustris</i> Muenchh.		5496	wet	FACW
<i>Quercus phellos</i> L.		5039	isl, rip	FACW-
Geraniaceae	<i>Geranium carolinianum</i> L.	5025	isl	
Haloragaceae	<i>Proserpinaca palustris</i> L.	4964	wet	OBL
Hydrangaceae	<i>Hydrangea arborescens</i> L.	5448	rip	FACU
Hydrophyllaceae	<i>Hydrolea ovata</i> Nutt. ex Choisy	5724	wet	OBL
Iridaceae	<i>Iris virginica</i> L.	4965	wet	OBL
	<i>Sisyrinchium angustifolium</i> P. Mill.	5028	isl	FAC
Juglandaceae	<i>Carya alba</i> (L.) Nutt. ex Ell.	5502	isl	
	<i>Carya cordiformis</i> (Wangenh.) K. Koch	5438	rip	FAC
Juncaceae	<i>Juncus acuminatus</i> Michx.	4969	wet, isl	OBL
	<i>Juncus coriaceous</i> Mackenzie	5732	wet	FACW
	<i>Juncus effusus</i> L.	5547	wet	FACW+

Family	Species	Voucher No.	Habitat(s)	Wetland
Lamiaceae	<i>Lycopus rubellus</i> Moench	5985	wet	OBL
	<i>Prunella vulgaris</i> L.	4953	wet	FAC-
	<i>Pycnanthemum tenuifolium</i> Schrad.	5497	pin	FAC-
	<i>Scutellaria elliptica</i> Muhl. ex Spreng. var. <i>elliptica</i>	5043	isl	
	<i>Scutellaria lateriflora</i> L.	5980	wet	FACW+
Lauraceae	<i>Sassafras albidum</i> (Nutt.) Nees	5511	isl	FACU
Lemnaceae	<i>Spirodela punctata</i> (G.F.W. Mey.) C.H. Thompson	4972	wet	OBL
Lentibulariaceae	<i>Urticularia gibba</i> L.	5964	wet	OBL
Liliaceae	<i>Melanthium virginicum</i> L.	5483	pin	OBL
	<i>Uvularia sessilifolia</i> L.	5044	isl	FAC+
Lythraceae	<i>Didiplis diandra</i> (Nutt. ex DC.) Wood	5725	wet	OBL
	<i>Rotala ramosior</i> (L.) Koehne	5981	wet	OBL
Melastomataceae	<i>Rhexia mariana</i> L. var. <i>interior</i> (Pennell) Kral & Bostick	5962	wet	FACW+
	<i>Rhexia virginica</i> L.	5723	wet	FACW+
Moraceae	<i>Morus rubra</i> L.	5538	isl	FAC
Nymphaeaceae	<i>Brasenia schreberi</i> J.F. Gmel.	5021	wet	OBL
	<i>Nuphar lutea</i> (L.) Sm.	5019	wet	OBL
	<i>Nymphaea odorata</i> Ait.	5018	wet	OBL
Nyssaceae	<i>Nyssa sylvatica</i> Marsh.	4966	wet, isl	FAC
Oleaceae	<i>Fraxinus americana</i> L.	5493	pin	FACU
Onagraceae	<i>Gaura longiflora</i> Spach	5967	roa	
	<i>Ludwigia alternifolia</i> L.	5459	wet	OBL
	<i>Ludwigia decurrens</i> Walt.	5989	wet	OBL
Osmundaceae	<i>Osmunda regalis</i> L.	5753	wet	OBL
Oxalidaceae	<i>Oxalis stricta</i> L.	5034	wet	UPL
Passifloraceae	<i>Passiflora incarnata</i> L.	5523	roa	
	<i>Passiflora lutea</i> L.	5518	roa	
Phytolaccaceae	<i>Phytolacca americana</i> L.	5526	isl	FACU+
Pinaceae	<i>Pinus taeda</i> L.	5761	wet, pin	FAC

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Family	Species	Voucher No.	Habitat(s)	Wetland	
Poaceae	<i>Andropogon virginicus</i> L. var. <i>virginicus</i>	6025	roa	FAC-	
	<i>Arundinaria gigantea</i> (Walt.) Muhl.	5480	rip	FACW	
	<i>Chasmanthium sessiliflorum</i> (Poir.) Yates	5987	pin	FAC+	
	<i>Dichantherium acuminatum</i> (Sw.) Gould & C.A. Clark var. <i>acuminatum</i>	5436	rip	FAC	
	<i>Dichantherium</i> <i>sphaerocarpon</i> (Ell.) Gould var. <i>isophyllum</i> (Scribn.) Gould & C.A. Clark	5463	rip	FACU	
	[^] <i>Digitaria ischaemum</i> (Schreb.) Schreb. ex Muhl.	5992	roa	UPL	
	[^] <i>Echinochloa muricata</i> (Beauv.) Fern.	5721	wet	FAC	
	<i>Elymus virginicus</i> L.	5474	rip	FAC	
	<i>Eragrostis hypnoides</i> (Lam.) B.S.P.	5994	roa	OBL	
	<i>Melica mutica</i> Walt.	5047	isl		
	<i>Panicum dichotomiflorum</i> Michx. var. <i>dichotomiflorum</i>	5991	wet	OBL	
	<i>Panicum rigidulum</i> Bosc ex Nees	5971	wet	FACW	
	<i>Tridens flavus</i> (L.) Hitchc. var. <i>flavus</i>	5969	roa	FACU	
	Polygonaceae	<i>Polygonum hydropiperoides</i> Michx.	5990	wet	OBL
		<i>Polygonum punctatum</i> Ell.	5982	wet	FACW+
		<i>Polygonum virginianum</i> L.	5961	wet	FAC
Potamogetonaceae	<i>Potamogeton diversifolius</i> Raf.	5975	wet	OBL	
	<i>Potamogeton pusillus</i> L.	5024	wet	OBL	
Ranunculaceae	<i>Anemone virginiana</i> L.	6008	pin	FACU+	
	<i>Ranunculus laxicaulis</i> (Torr. & Gray) Darby	4957	wet	OBL	
	<i>Ranunculus pusillus</i> Poir.	5508	wet	FACW+	

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Family	Species	Voucher No.	Habitat(s)	Wetland
Rhamnaceae	<i>Berchemia scandens</i> (Hill) K. Koch	5742	wet	FACW
	<i>Frangula caroliniana</i> (Walt.) Gray	5537	isl	FACU
Rosaceae	<i>Agrimonia rostellata</i> Wallr.	5740	pin	FAC
	<i>Amelanchier arborea</i> (Michx. f.) Fern.	5749	pin	FACU
	<i>Crataegus marshallii</i> Egglest.	5532	isl	FAC
	<i>Crataegus spathulata</i> Michx.	5450	isl, rip	FAC
	<i>Geum canadense</i> Jacq.	5454	rip	FAC
	<i>Prunus mexicana</i> S. Wats.	5505	isl	
	<i>Prunus serotina</i> Ehrh.	5522	pin, roa	FACU
	<i>Rosa setigera</i> Michx. var. <i>tomentosa</i> Torr. & Gray	5462	rip, roa	FACU
	<i>Rubus argutus</i> Link	5032	isl	FAC
	Rubiaceae	<i>Cephalanthus occidentalis</i> L.	5963	wet
<i>Diodia virginiana</i> L.		5760	wet	FACW
<i>Galium obtusum</i> Bigelow		4956	wet, isl	FACW-
<i>Galium pilosum</i> Ait.		5528	isl	
<i>Houstonia purpurea</i> L.		5451	rip	
Salicaceae	<i>Salix nigra</i> Marsh.	4975	wet, roa	OBL
Scrophulariaceae	<i>Gratiola neglecta</i> Torr.	5033	wet	OBL
	<i>Lindernia dubia</i> (L.) Pennell	5476	wet, rip	OBL
	<i>Mimulus alatus</i> Ait.	5974	wet	OBL
Smilacaceae	<i>Smilax bona-nox</i> L.	5046	isl	FAC
	<i>Smilax glauca</i> Walt.	5045	isl	FAC
	<i>Smilax rotundifolia</i> L.	4962	isl, pin, rip	FAC
Solanaceae	<i>Solanum carolinense</i> L.	5030	isl	FACU
Sparganiaceae	<i>Sparganium androcladum</i> (Engelm.) Morong	5772	wet	OBL
Staphyleaceae	<i>Staphylea trifolia</i> L.	5455	rip	FAC
Styracaceae	<i>Styrax grandifolius</i> Ait.	5471	rip	FACU-
Tiliaceae	<i>Tilia americana</i> L. var. <i>americana</i>	5443	rip	FACU
Typhaceae	<i>Typha angustifolia</i> L.	5516	wet	OBL
	<i>Typha latifolia</i> L.	5545	wet	OBL
Ulmaceae	<i>Celtis laevigata</i> Willd.	6014	wet	FACW
	<i>Ulmus alata</i> Michx.	5051	isl, roa	FACU+
	<i>Ulmus americana</i> L.	6005	wet, rip	FACW

Vascular Plant Species Inventory of Richardson Bottoms Wildlife Viewing Area

Family	Species	Voucher No.	Habitat(s)	Wetland
Urticaceae	<i>Boehmeria cylindrica</i> (L.) Sw.	5973	wet	FACW+
Verbenaceae	<i>Callicarpa americana</i> L.	5513	isl	FACU-
	<i>Phryma leptostachya</i> L.	5449	rip	FACU
Vitaceae	<i>Parthenocissus quinquefolia</i> (L.) Planch.	5446	rip	FAC
	<i>Vitis cinerea</i> (Engelm.) Millard var. <i>cinerea</i>	5517	wet	FAC+
	<i>Vitis rotundifolia</i> Michx. var. <i>rotundifolia</i>	5050	wet, isl, rip	FAC
	<i>Vitis vulpina</i> L.	5744	wet	FAC+

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