

**Graminoid Survey of the Oak Ridge Reservation  
Paul Durr, Water Resources, LLC  
May-June 2009**

**Introduction:**

During late summer 2008, Water Resources, LLC conducted a field survey for graminoids (i.e., grass-like plants) in various locations on the Oak Ridge Reservation (ORR). The purpose of the survey was to document the occurrence of this under-collected group of organisms in order to better understand their local distribution and to identify rare or previously undocumented species. Because the initial field effort was restricted to the latter part of the growing season, additional surveys were undertaken in 2009 during the period May-June, so that early- and mid-season flowering species could be identified.

**Methods:**

As in 2008, field methods employed randomized walk-through surveys. The surveys consisted of careful visual screening of unique habitats recognized as having the greatest potential for supporting the target species. Whenever a graminoid was encountered, it was identified to species and recorded in order to develop a comprehensive species occurrence list. Unknowns were collected and pressed for later identification.

Last year's surveys incorporated 10 Natural Areas (NAs) and two reference areas (RAs). Because many sedge species prefer wetlands, these habitats were strongly favored. In 2009 we elected to revisit six of the Natural Areas investigated earlier, but the survey areas were expanded to include adjoining mesic hillsides. We also surveyed four additional areas which were thought to have a high potential for supporting new species--NA2 Old Growth, NA 25 *Carex louisianca* Site, NA53, and RA8 Raccoon Barrens.

**Results:**

A total of 144 graminoid taxa were identified to the species level. Another three were identified to the varietal level, and two were discernible only to genus. By far the most dominant genera in terms of species counts were *Carex* (true sedge) at 50, *Dichanthelium* (rosette grass) at 8, *Juncus* (rush) at 8, *Panicum* (panic grass) at 5, and *Poa* (blue grass) at 5. A complete inventory list of graminoids for each survey area (including 2008 data) is presented as an addendum to this report.

A review of earlier floristic lists<sup>1</sup> indicates that 13 of the species identified during the 2009 survey are new to the ORR. Three undocumented varieties of previously known species were also discovered. Three other plants, which had been attributed to other common species, were actually discovered to have been improperly identified or had been recently classified as new distinct taxonomic entities. According to the [University of Tennessee \(UT\) Herbarium website](#), ten of the taxa represent Roane and/or Anderson County records. While none of these are listed by the [Tennessee Department of Environment and Conservation's Division of Natural Heritage](#) as rare, several species such as *Carex albicans* var. *australis* and *Carex umbellata* are only thinly distributed within the state.

Table 1 provides additional information on these newly discovered taxa.

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<sup>1</sup> [Oak Ridge Reservation Vascular Flora](#). 1998;

Awl, D. J., L. R. Pounds, B. A. Rosensteel, A. L. King, and P. A. Hamlett. 1996. [Survey of Protected Vascular Plants on the Oak Ridge Reservation, Oak Ridge, Tennessee](#). ES/ER/TM-194. Oak Ridge National Laboratory, Oak Ridge, TN.;

Parr, Patricia D., and Joan F. Hughes. 2006. [Oak Ridge Reservation Physical Characteristics and Natural Resources](#). ORNL/TM-2006/110. October.

**Table 1. Newly Discovered Graminoid Species of the ORR, 2009.**

Taxon	Common Name	Collection Location	County Record?	Comments <sup>1</sup>
<i>Agrostis gigantea</i>	redtop	NA49	no	Native to Eurasia
<i>Agrostis scabra</i>	rough bent grass	NA6	Roane	Not collected
<i>Bromus racemosus</i>	smooth brome	NA49	?	Native to Europe. This species appears on the 5 <sup>th</sup> <i>Checklist of Tennessee Plants</i> but is not on the UT website.
<i>Carex albicans</i> var. <i>australis</i>	stellate sedge	NA6	Anderson, Roane	Known from only 5 counties in middle and east Tennessee.
<i>Carex annectens</i>	yellow-fruited sedge	NA49	no	Not collected
<i>Carex careyana</i>	Carey's sedge	NA2, NA4	Anderson, Roane	Not previously documented from east of the Cumberland escarpment.
<i>Carex corrugata</i>	eastern narrow-leaf sedge	NA6, NA25, NA36	Anderson	Often confused with <i>C. grisea</i> and <i>C. amphibola</i> .
<i>Carex cumberlandensis</i>	Cumberland sedge	NA2, NA4, NA6, NA36	no	Described as a new species in 2001.
<i>Carex gracilescens</i>	slender loose-flower sedge	NA36	Anderson	
<i>Carex kralinana</i>	Kral's sedge	NA4, NA6, NA11	Roane	Described as a new species in 2002.
<i>Carex laxiculmis</i>	spreading sedge	NA4, NA36, NA42	Roane	
<i>Carex planispicata</i>	flat-spiked sedge	NA6, NA36, RA8	Anderson, Roane	Described as a new species in 1999. It was previously considered a variety of <i>C. amphibola</i> . A 1985 ORRH collection of this species was identified as <i>C. amphibola</i> .
<i>Carex plantaginea</i>	plantain-leaved sedge	NA11	no	Not collected
<i>Carex texensis</i>	Texas sedge	NA4, NA6	no	Some authors have considered this a variety of <i>C. rosea</i> . A 1993 collection of this species resides in ORRH but was improperly ascribed to <i>C. retroflexa</i> .
<i>Carex umbellata</i>	parasol sedge	NA2	Roane	Known from only 9 counties in middle and east Tennessee.
<i>Dichanthelium linearifolium</i>	slim-leaf panic grass	NA2	no	
<i>Echinochloa muricata</i> var. <i>macrostachya</i>	rough barnyard grass	NA6, NA49	Anderson, Roane	Native to the western U.S.

Taxon	Common Name	Collection Location	County Record?	Comments <sup>1</sup>
<i>Elymus virginicus</i> var. <i>intermedius</i>	Virginia wild-rye	NA6	?	The taxonomy of this wide-ranging species is not well understood. The variety "intermedius" has only recently appeared on the 5 <sup>th</sup> <i>Checklist of Tennessee Plants</i> but is not on the UT website.
<i>Juncus antheratus</i>	greater poverty rush	NA49	no	<i>J. antheratus</i> was once considered a variety of <i>J. tenuis</i> . It was elevated to species status in 1999. A number of ORRH specimens labeled <i>J. tenuis</i> are best assigned to this new species.

<sup>1</sup> Edward W. Chester, B. Eugene Wofford, Dwayne Estes, and Claude Bailey. 2009. *Fifth Checklist of Tennessee Plants*. Botanical Research Institute of Texas Press. Fort Worth, TX.

### Recommendations:

Field surveys conducted in 2008 and 2009 have resulted in the discovery of 20 graminoid species that were previously unknown on the ORR. Another three undocumented grass and sedge varieties have also been documented. Because such a significant number of additions have been made with only a moderate amount of effort, it strongly suggests that this group of organisms has been understudied.

Given the conservation goals of the ORR, it is desirable that additional surveys be undertaken to better understand the local occurrence of graminoids and to document rare or previously undocumented species. Since most of our past field efforts have been concentrated in wetlands and adjoining mesic areas, it would be advantageous to continue conducting surveys in habitats that have not received much attention such as xeric sites, barrens, and ruderal (i.e., waste) areas. Before additional studies are undertaken, however, it is imperative that voucher specimens collected during past field efforts be mounted, labeled, and entered into the ORR Herbarium. Data archiving is also an important complement to any field effort, so it is further recommended that if funding becomes available, the ORR Herbarium list of vascular flora be updated to include the new species and varieties.

**Graminoid Species Inventoried  
By Water Resources, LLC  
On the Oak Ridge Reservation**

**Oak Ridge Reservation  
Graminoid Inventory  
Water Resources, LLC**

<b>Location Name:</b>	<b>Natural Area 2, Old Growth Forest and Vicinity</b>
<b>Coordinates:</b>	<b>35.96375, 84.34849</b>
<b>Date:</b>	<b>May 22, 2009</b>

<b>Taxon</b>	<b>Common Name</b>
<i>Brachyelytrum erectum</i>	bearded shorthusk grass
<i>Carex abscondita</i>	thicket sedge
<i>Carex albicans?</i> (sterile)	white-tinge sedge
<i>Carex albursina</i>	white bear sedge
<i>Carex amphibola</i>	eastern narrowleaf sedge
<i>Carex careyana</i>	Carey's sedge
<i>Carex cephalophora</i>	oval-leaf sedge
<i>Carex cumberlandensis</i>	Cumberland sedge
<i>Carex digitalis</i>	slender woodland sedge
<i>Carex hirsutella</i>	fuzzy sedge
<i>Carex jamesii</i>	James' sedge
<i>Carex laxiflora</i>	broad looseflower sedge
<i>Carex pensylvanica</i>	Pennsylvania sedge
<i>Carex rosea</i>	rosy sedge
<i>Carex swanii</i>	Swan's sedge
<i>Carex texensis</i>	Texas sedge
<i>Carex umbellata?</i> (sterile)	parasol sedge
<i>Carex virescens</i>	ribbed sedge
<i>Carex vulpinoidea</i>	fox sedge
<i>Danthonia spicata</i>	poverty grass
<i>Dichanthelium boscii</i>	Bosc's panic grass
<i>Dichanthelium dichotomum</i>	cypress witch grass
<i>Dichanthelium linearifolium</i>	slim-leaf panic grass
<i>Hystrix patula</i>	bottlebrush grass
<i>Juncus tenuis</i>	path rush
<i>Microstegium vimineum</i>	Nepal microstegium
<i>Poa sylvestris</i>	woodland blue grass
<i>Sphenopholis nitida</i>	shiny wedge grass

**Oak Ridge Reservation  
Graminoid Inventory  
Water Resources, LLC**

<b>Location Name:</b>	<b>Natural Area 4, Wetland Seepage Areas and Vicinity</b>
<b>Coordinates:</b>	<b>35.94307, 84.34841</b>
<b>Date:</b>	<b>August 19, 2008; June 8, 2009</b>

Taxon	Common Name
<i>Agrostis perennans</i>	upland bent grass
<i>Arundinaria gigantea</i>	giant cane
<b><i>Carex albursina</i><sup>1</sup></b>	<b>white bear sedge</b>
<i>Carex amphibola</i>	eastern narrow-leaf sedge
<i>Carex blanda</i>	woodland sedge
<i>Carex bromoides</i>	brome-like sedge
<b><i>Carex careyana</i></b>	<b>Carey's sedge</b>
<i>Carex crinita</i>	fringed sedge
<b><i>Carex cumberlandensis</i></b>	<b>Cumberland sedge</b>
<i>Carex debilis</i>	white edge sedge
<i>Carex frankii</i>	Frank's sedge
<i>Carex gracillima</i>	graceful sedge
<i>Carex grisea</i>	narrow-leaf sedge
<i>Carex intumescens</i>	bladder sedge
<b><i>Carex kraliana</i></b>	<b>Kral's sedge</b>
<b><i>Carex laxiculmis</i></b>	<b>spreading sedge</b>
<i>Carex lupulina</i>	hop sedge
<i>Carex lurida</i>	sallow sedge
<i>Carex oxylepis</i>	sharp-scale sedge
<b><i>Carex pennsylvanica</i></b>	<b>Pennsylvania sedge</b>
<b><i>Carex prasina</i></b>	<b>drooping sedge</b>
<b><i>Carex rosea</i></b>	<b>rosy sedge</b>
<i>Carex sp.</i>	Carex species (no perigynia present)
<b><i>Carex squarrosa</i></b>	<b>squarrose sedge</b>
<b><i>Carex styloflexa</i></b>	<b>bent sedge</b>
<i>Carex texensis</i>	Texas sedge

<sup>1</sup> Species highlighted in bold type in this and subsequent tables are those discovered during the 2009 field survey.

<b>Taxon</b>	<b>Common Name</b>
<i>Carex tribuloides</i>	blunt broom sedge
<b><i>Carex vulpinoidea</i></b>	<b>fox sedge</b>
<i>Chasmanthium laxum</i>	slender wood-oats
<i>Cinna arundinacea</i>	wood reed grass
<i>Dichanthelium clandestinum</i>	deer tongue grass
<i>Dichanthelium dichotomum</i>	cypress witch-grass
<i>Dichanthium commutatum</i>	variable panic grass
<b><i>Eleocharis erythropoda</i></b>	<b>bald spikerush? (sterile specimen)</b>
<i>Elymus hystrix</i>	bottlebrush grass
<b><i>Festuca subverticillata</i></b>	<b>nodding fescue</b>
<i>Glyceria striata</i>	fowl manna grass
<i>Juncus coriaceous</i>	leathery rush
<i>Juncus effusus</i>	soft rush
<b><i>Leersia oryzoides</i></b>	<b>rice cut grass</b>
<i>Leersia virginica</i>	white grass
<i>Luzula acuminata</i>	hairy woodrush
<i>Microstegium vimineum</i>	Nepal microstegium
<b><i>Poa autumnalis</i></b>	<b>autumn blue grass</b>
<b><i>Poa sylvestris</i></b>	<b>woodland blue grass</b>
<b><i>Scirpus atrovirens</i></b>	<b>green bulrush</b>
<i>Scirpus polyphyllus</i>	leafy bulrush

**Oak Ridge Reservation  
Graminoid Inventory  
Water Resources, LLC**

<b>Location Name:</b>	<b>Natural Area 6, Raccoon Creek Embayment Wetland and Vicinity</b>
<b>Coordinates:</b>	<b>35.90202, 84.35244</b>
<b>Date:</b>	<b>August 21, 2008; May 14, 2009</b>

Taxon	Common Name
<i>Agrostis perennans</i>	upland bent grass
<i>Agrostis scabra</i>	rough bent grass
<i>Arthraxon hispidus</i>	Japanese jointhead
<b><i>Arundinaria gigantea</i></b>	<b>river cane</b>
<i>Bromus pubescens</i>	hairy woodland brome
<b><i>Carex abscondita</i></b>	<b>thicket sedge</b>
<b><i>Carex blanda</i></b>	<b>eastern woodland sedge</b>
<b><i>Carex corrugata</i></b>	<b>prune-fruit sedge</b>
<i>Carex crinita</i>	fringed sedge
<b><i>Carex cumberlandensis</i></b>	<b>Cumberland sedge</b>
<b><i>Carex festucacea?</i> (immature)</b>	<b>fescue sedge</b>
<i>Carex frankii</i>	Frank's sedge
<i>Carex gracillima</i>	graceful sedge
<b><i>Carex hirsutella</i></b>	<b>fuzzy sedge</b>
<b><i>Carex kraliana</i></b>	<b>Kral's sedge</b>
<i>Carex lupulina</i>	hop sedge
<i>Carex lurida</i>	sallow sedge
<b><i>Carex albicans</i> var. <i>australis</i></b>	<b>stellate sedge</b>
<i>Carex oxylepis</i>	sharp-scale sedge
<b><i>Carex pensylvanica</i></b>	<b>Pennsylvania sedge</b>
<b><i>Carex planispicata</i></b>	<b>flat-spiked sedge</b>
<b><i>Carex retroflexa</i></b>	<b>reflexed sedge</b>
<i>Carex</i> sp.	Carex species (no perigynia present)
<i>Carex squarrosa</i>	squarrose sedge
<b><i>Carex texensis</i></b>	<b>Texas sedge</b>
<i>Carex tribuloides</i>	blunt broom sedge
<i>Carex vulpinoidea</i>	fox sedge
<b><i>Carex willdenowii</i></b>	<b>Willdenow's sedge</b>
<i>Chasmanthium latifolium</i>	Indian wood-oats

Taxon	Common Name
<i>Chasmanthium laxum</i>	slender wood-oats
<i>Cinna arundinacea</i>	wood reed grass
<b><i>Danthonia spicata</i></b>	<b>poverty grass</b>
<b><i>Dichantherium boscii</i></b>	<b>Bosc's panic grass</b>
<i>Dichantherium clandestinum</i>	deer tongue grass
<b><i>Dichantherium commutatum</i></b>	<b>variable panic grass</b>
<i>Dichantherium dichotomum</i>	cypress witch grass
<i>Echinochloa crus-galli</i>	barnyard grass
<i>Echinochloa muricata</i> var. <i>microstachya</i>	rough barnyard grass
<i>Echinochloa muricata</i> var. <i>muricata</i>	rough barnyard grass
<i>Eleocharis obtusa</i>	blunt spikerush
<i>Elymus virginicus</i> var. <i>intermedius</i>	Virginia wild-rye
<i>Elymus virginicus</i> var. <i>virginicus</i>	Virginia wild-rye
<i>Festuca arundinacea</i>	tall fescue
<i>Glyceria striata</i>	fowl manna grass
<i>Juncus acuminatus</i>	taper-tip rush
<i>Juncus coriaceus</i>	leathery rush
<i>Juncus dudleyi</i>	Dudley's rush
<i>Juncus effusus</i>	soft rush
<i>Leersia oryzoides</i>	rice cut grass
<i>Leersia virginica</i>	white grass
<b><i>Melica mutica</i></b>	<b>two-flower melic grass</b>
<i>Microstegium vimineum</i>	Nepal microstegium
<i>Panicum anceps</i>	beaked panic grass
<b><i>Piptochaetium avenaceum</i></b>	<b>blackseed needle grass</b>
<b><i>Poa autumnalis</i></b>	<b>autumn blue grass</b>
<b><i>Poa sylvestris</i></b>	<b>woodland blue grass</b>
<i>Schoenoplectus tabernaemontani</i>	softstem bulrush
<i>Scirpus atrovirens</i>	green bulrush
<i>Scirpus cyperinus</i>	wool-grass
<b><i>Scleria oligantha</i></b>	<b>littlehead nut-rush</b>
<b><i>Sphenopholis intermedia</i></b>	<b>slender wedge grass</b>
<b><i>Sphenopholis nitida</i></b>	<b>shiny wedge grass</b>

**Oak Ridge Reservation  
Graminoid Inventory  
Water Resources, LLC**

<b>Location Name:</b>	<b>Natural Area 11, Bull Bluff and Vicinity</b>
<b>Coordinates:</b>	<b>35.94770, 84.24345</b>
<b>Date:</b>	<b>September 12, 2008; May 13, 2009</b>

Taxon	Common Name
<i>Bromus pubescens</i>	hairy woodland brome
<i>Carex abscondita</i>	thicket sedge
<b><i>Carex albicans</i> var. <i>albicans</i></b>	<b>white tinge sedge</b>
<b><i>Carex albursina</i></b>	<b>white bear sedge</b>
<b><i>Carex blanda</i></b>	<b>eastern woodland sedge</b>
<i>Carex complanata</i>	hirsute sedge
<b><i>Carex digitalis</i></b>	slender woodland sedge
<i>Carex eburnea</i>	bristle-leaf sedge
<b><i>Carex grisea</i></b>	<b>inflated narrow-leaf sedge</b>
<b><i>Carex hirsutella</i></b>	<b>fuzzy sedge</b>
<b><i>Carex kraliana</i></b>	<b>Kral's sedge</b>
<b><i>Carex laxiflora</i></b>	<b>broad loose-flower sedge</b>
<b><i>Carex plantaginea</i></b>	<b>plantain-leaved sedge</b>
<i>Carex swanii</i>	Swan's sedge
<i>Danthonia spicata</i>	poverty oat-grass
<i>Dichanthelium boscii</i>	Bosc's panic grass
<i>Dichanthelium sphaerocarpon</i> var. <i>isopyllum</i>	round-seed panic grass
<b><i>Elymus virginicus</i></b>	<b>Virginia wild-rye</b>
<i>Leersia virginica</i>	white grass
<i>Melica mutica</i>	two-flower melic grass
<i>Microstegium vimineum</i>	Nepal microstegium
<b><i>Poa cuspidata</i></b>	<b>early blue grass</b>
<i>Saccharum alopecuroides</i>	silver plume grass
<i>Schizachyrium scoparium</i>	little bluestem
<b><i>Sphenopholis nitida</i></b>	<b>shining wedge grass</b>

**Oak Ridge Reservation  
Graminoid Inventory  
Water Resources, LLC**

<b>Location Name:</b>	Natural Area 25, <i>Carex louisianica</i> Site and Vicinity <sup>3</sup>
<b>Coordinates:</b>	35.90258, 84.33265
<b>Date:</b>	May 14, 2009; June 26, 2009

Taxon	Common Name
<i>Carex amphibola</i>	eastern narrowleaf sedge
<i>Carex blanda</i>	eastern woodland sedge
<i>Carex corrugata</i>	prune-fruit sedge
<i>Carex frankii</i>	Frank's sedge
<i>Carex granularis</i>	limestone meadow sedge
<i>Carex lurida</i>	sallow sedge
<i>Carex oxylepis</i>	sharp-scale sedge
<i>Carex squarrosa</i>	squarrose sedge
<i>Carex tribuloides</i>	blunt broom sedge
<i>Carex vulpinoidea</i>	fox sedge
<i>Dichanthelium clandestinum</i>	deer tongue grass
<i>Eleocharis</i> sp. (sterile)	spikerush
<i>Elymus hystrix</i>	bottle brush grass
<i>Elymus villosus</i>	hairy wild-rye
<i>Glyceria striata</i>	fowl manna grass
<i>Juncus coriaceous</i>	leathery rush
<i>Leersia virginica</i>	white grass
<i>Microstegium vimineum</i>	Nepal microstegium
<i>Poa autumnalis</i>	autumn blue grass
<i>Scirpus atrovirens</i>	green bulrush

<sup>3</sup> *Carex louisianica* was not rediscovered during this survey.

**Oak Ridge Reservation  
Graminoid Inventory  
Water Resources, LLC**

<b>Location Name:</b>	<b>Natural Area 36, Bearden Creek Embayment Wetland and Vicinity</b>
<b>Coordinates:</b>	<b>35.93411, 84.28374</b>
<b>Date:</b>	<b>September 11, 2008; May 13, 2009</b>

Taxon	Common Name
<i>Brachyelytrum erectum</i>	bearded shorthusk
<i>Carex abscondita</i>	thicket sedge
<i>Carex blanda</i>	eastern woodland sedge
<i>Carex communis</i>	fibrousroot sedge
<i>Carex corrugata</i>	prune-fruit sedge
<i>Carex crinita</i>	fringed sedge
<i>Carex cumberlandensis</i>	Cumberland sedge
<i>Carex debilis</i>	white edge sedge
<i>Carex digitalis</i>	slender woodland sedge
<i>Carex frankii</i>	Frank's sedge
<i>Carex gracilescens</i>	slender looseflower sedge
<i>Carex granularis</i>	limestone meadow sedge
<i>Carex hirsutella</i>	fuzzy sedge
<i>Carex laevivaginata</i>	smooth sheath sedge
<i>Carex laxiculmis</i>	spreading sedge
<i>Carex lupulina</i>	hop sedge
<i>Carex lurida</i>	sallow sedge
<i>Carex oxylepis</i>	sharp scale sedge
<i>Carex pensylvanica</i>	Pennsylvania sedge
<i>Carex planispicata?</i> (immature)	flat-spiked sedge
<i>Carex prasina</i>	drooping sedge
<i>Carex rosea</i>	rosy sedge
<i>Carex tribuloides</i>	blunt broom sedge
<i>Carex vulpinoidea</i>	fox sedge
<i>Dichanthelium boscii</i>	Bosc's panic grass
<i>Dichanthelium clandestinum</i>	deer tongue grass
<i>Elymus virginicus</i>	Virginia wild-rye
<i>Glyceria striata</i>	fowl manna grass

Taxon	Common Name
<i>Juncus coriaceus</i>	leathery rush
<i>Juncus effusus</i>	soft rush
<i>Leersia oryzoides</i>	rice cut grass
<i>Leersia virginica</i>	white grass
<b><i>Luzula echinata</i></b>	<b>hedgehog woodrush</b>
<b><i>Melica mutica</i></b>	<b>two-flowered melic grass</b>
<i>Microstegium vimineum</i>	Nepal microstegium
<b><i>Poa cuspidata</i></b>	<b>early blue grass</b>
<i>Scirpus atrovirens</i>	green bulrush
<i>Scirpus cyperinus</i>	wool-grass
<b><i>Sphenopholis nitida</i></b>	<b>shining wedge grass</b>

**Oak Ridge Reservation  
Graminoid Inventory  
Water Resources, LLC**

<b>Location Name:</b>	Natural Area 42, Ish Creek Wetland Area and Vicinity
<b>Coordinates:</b>	35.92196, 84.34785
<b>Date:</b>	August 21, 2008; June 6, 2009

Taxon	Common Name
<i>Agrostis perennans</i>	upland bent grass
<b><i>Brachyelytrum erectum</i></b>	<b>bearded shorthusk grass</b>
<b><i>Carex atlantica ssp. capillacea</i></b>	<b>prickly bog sedge</b>
<b><i>Carex blanda</i></b>	<b>eastern woodland sedge</b>
<i>Carex complanata</i>	hirsute sedge
<i>Carex crinita</i>	fringed sedge
<i>Carex debilis</i>	white edge sedge
<i>Carex frankii</i>	Frank's sedge
<i>Carex intumescens</i>	bladder sedge
<b><i>Carex laxiculmis</i></b>	<b>spreading sedge</b>
<b><i>Carex laxiflora</i></b>	<b>broad looseflower sedge</b>
<i>Carex lurida</i>	sallow sedge
<b><i>Carex styloflexa</i></b>	<b>bent sedge</b>
<b><i>Carex tribuloides</i></b>	<b>blunt broom sedge</b>
<b><i>Carex vulpinoidea</i></b>	<b>fox sedge</b>
<i>Chasmanthium laxum</i>	slender wood-oats
<b><i>Dichanthelium boscii</i></b>	<b>Bosc's panic grass</b>
<i>Dichanthelium clandestinum</i>	deer tongue grass
<b><i>Dichanthelium commutatum</i></b>	<b>variable panic grass</b>
<i>Dichanthelium dichotomum</i> var. <i>ramulosum</i>	cypress witch grass
<i>Dichanthelium sphaerocarpon</i> var. <i>isophyllum</i>	roundseed panic grass
<b><i>Dichanthelium polyanthes</i></b>	<b>roundseed panic grass</b>
<b><i>Elymus hystrix</i></b>	<b>eastern bottlebrush grass</b>
<i>Elymus virginicus</i>	Virginia wild-rye
<b><i>Festuca subverticillata</i></b>	<b>nodding fescue</b>
<i>Glyceria striata</i>	fowl manna grass
<i>Juncus coriaceus</i>	leathery rush
<i>Juncus effusus</i>	soft rush

Taxon	Common Name
<b><i>Leersia oryzoides</i></b>	<b>rice cut grass</b>
<i>Leersia virginica</i>	white grass
<b><i>Luzula echinata</i></b>	<b>hedgehog woodrush</b>
<b><i>Melica mutica</i></b>	<b>two-flower melic grass</b>
<i>Microstegium vimineum</i>	Nepal microstegium
<i>Scirpus polyphyllus</i>	leafy bulrush

**Oak Ridge Reservation  
Graminoid Inventory  
Water Resources, LLC**

<b>Location Name:</b>	<b>Natural Area 49, Gallaher Bridge Wetlands and Vicinity</b>
<b>Coordinates:</b>	<b>35.91276, 84.40044</b>
<b>Date:</b>	<b>September 10, 2008; June 26, 2009</b>

Taxon	Common Name
<b><i>Agrostis gigantea</i></b>	<b>redtop</b>
<i>Andropogon virginicus</i>	broom-sedge
<i>Bromus commutatus</i>	hairy chess
<b><i>Bromus racemosus</i></b>	<b>bald brome</b>
<b><i>Carex annectens</i></b>	<b>yellowfruit sedge</b>
<b><i>Carex frankii</i></b>	<b>Frank's sedge</b>
<b><i>Carex granularis</i></b>	<b>limestone meadow sedge</b>
<i>Carex grayi</i>	Gray's sedge
<i>Carex lupulina</i>	hop sedge
<b><i>Carex lurida</i></b>	<b>sallow sedge</b>
<b><i>Carex scoparia</i></b>	<b>broom sedge</b>
<b><i>Carex squarrosa</i></b>	<b>squarrose sedge</b>
<i>Carex tribuloides</i>	blunt broom sedge
<i>Carex vulpinoidea</i>	fox sedge
<i>Cyperus bipartitus</i>	shining flatsedge
<b><i>Cyperus echinatus</i></b>	<b>globe flatsedge</b>
<i>Cyperus oderatus</i>	fragrant flatsedge
<b><i>Cyperus retrofractus?</i> (immature)</b>	<b>rough flatsedge</b>
<i>Cyperus strigosus</i>	straw-color flatsedge
<i>Dichanthelium clandestinum</i>	deer tongue grass
<i>Dichanthelium dichotomum</i>	cypress witch grass
<i>Dichanthelium scoparium</i>	broom panic grass
<b><i>Digitaria ischaemum</i></b>	<b>smooth crabgrass</b>
<i>Digitaria sanguinalis</i>	smooth crabgrass
<i>Echinochloa crus-galli</i>	barnyard grass
<i>Echinochloa muricata</i> var. <i>microstachya</i>	rough barnyard grass
<i>Echinochloa muricata</i> var. <i>muricata</i>	rough barnyard grass
<i>Eleocharis obtusa</i>	blunt spikerush
<i>Eleocharis</i> sp. (sterile)	spikerush

<b>Taxon</b>	<b>Common Name</b>
<b><i>Elymus villosus</i></b>	<b>hairy wild-rye</b>
<b><i>Elymus virginicus</i></b>	<b>Virginia wild-rye</b>
<i>Eragrostis pectinacea</i>	tufted love grass
<i>Festuca arundinacea</i>	tall fescue
<i>Fimbristylis autumnalis</i>	slender fimbry
<b><i>Holcus lanatus</i></b>	<b>velvet grass</b>
<i>Juncus acuminatus</i>	taper-tip rush
<i>Juncus antheratus</i>	greater poverty rush
<b><i>Juncus brachycarpus</i></b>	<b>short-fruited rush</b>
<i>Juncus coriaceous</i>	leathery rush
<i>Juncus effusus</i>	soft rush
<b><i>Juncus marginatus</i></b>	<b>grassleaf rush</b>
<i>Juncus tenuis</i>	path rush
<b><i>Kylliga gracillima</i></b>	<b>pasture flatsedge</b>
<i>Leersia oryzoides</i>	rice cut grass
<i>Microstegium vimineum</i>	Nepal microstegium
<i>Muhlenbergia schreberi</i>	nimblewill
<i>Panicum anceps</i>	beaked panic grass
<i>Panicum capillare</i>	witch grass
<i>Panicum flexile</i>	wiry witch grass
<i>Panicum rigidulum</i>	red-top panic grass
<b><i>Panicum virgatum</i></b>	<b>switch grass</b>
<i>Paspalum dilatatum</i>	Dallis grass
<i>Paspalum laeve</i>	smooth paspalum
<b><i>Phleum pratense</i></b>	<b>timothy</b>
<b><i>Poa compressa</i></b>	<b>Canada blue grass</b>
<b><i>Poa pratensis</i></b>	<b>Kentucky blue grass</b>
<i>Rhynchospora capitellata</i>	brown beakrush
<i>Saccharum alopecuroides</i>	silver plume grass
<i>Schizachyrium scoparium</i>	little bluestem
<i>Scirpus atrovirens</i>	green bulrush
<i>Scirpus cyperinus</i>	wool-grass
<b><i>Scirpus pendulus</i></b>	<b>pendant bulrush</b>
<i>Setaria faberi</i>	Japanese bristle grass
<i>Setaria pumila</i>	yellow bristle grass
<i>Sorghastrum nutans</i>	indian grass
<i>Sorghum halapense</i>	Johnson grass
<i>Sporobolus vaginiflorus</i>	poverty dropseed

Taxon	Common Name
<i>Tridens flavus</i>	purpletop
<b><i>Vulpia myuros</i></b>	<b>rat-tail fescue</b>

**Oak Ridge Reservation  
Graminoid Inventory  
Water Resources, LLC**

<b>Location Name:</b>	<b>West of Natural Area 53</b>
<b>Coordinates:</b>	<b>35.89502, 84.32521</b>
<b>Date:</b>	<b>June 26, 2009</b>

<b>Taxon</b>	<b>Common Name</b>
<i>Arundinaria gigantea</i>	river cane
<i>Carex frankii</i>	Frank's sedge
<i>Carex lupulina</i>	hop sedge
<i>Carex lurida</i>	sallow sedge
<i>Carex shortiana</i>	Short's sedge
<i>Carex tribuloides</i>	blunt broom sedge
<i>Carex vulpinoidea</i>	fox sedge
<i>Cinna arundinacea</i>	woodland reed grass
<i>Glyceria striata</i>	fowl manna grass
<i>Juncus coriaceous</i>	leathery rush
<i>Juncus effusus</i>	soft rush
<i>Microstegium vimineum</i>	Nepal microstegium
<i>Poa sylvestris</i>	woodland blue grass

**Oak Ridge Reservation  
Graminoid Inventory  
Water Resources, LLC**

<b>Location Name:</b>	<b>Research Area 8, Raccoon Creek Barren</b>
<b>Coordinates:</b>	<b>35.89995, 84.35616</b>
<b>Date:</b>	<b>May 14, 2009</b>

<b>Taxon</b>	<b>Common Name</b>
<i>Bouteloua curtipendula</i>	sideoats grama
<i>Carex hirsutella</i>	fuzzy sedge
<i>Carex planispicata</i>	flat-spiked sedge
<i>Melica mutica</i>	two-flower melic grass
<i>Panicum virgatum</i>	switchgrass
<i>Schizachyrium scoparium</i>	little bluestem
<i>Scleria oligantha</i>	little-head nutrush
<i>Tridens flavus</i>	purpletop