

COUNTY RECORDS AND MAJOR RANGE EXTENSIONS
FOR VASCULAR PLANTS FROM THE WEST CROSS TIMBERS
IN ERATH COUNTY, TEXAS

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Abstract.—Floristic data for Erath County, Texas, is unknown or limited. In this investigation plants were collected from 35 sites in Erath County from September 2003 to April 2008. Plants were identified and categorized based on the following status: introduced, endemic, threatened, and endangered species, as well as county records and major range extensions. One hundred and nineteen new county records were recorded for Erath County. Sixty five species were major range extensions, occurring greater than one county away from the border of Erath County. Twenty-six species were introduced while 93 species were native. Six of the native species were endemic to Texas, with *Penstemon guadalupensis* classified as endemic to north-central Texas and the Edwards Plateau. There were no rare, threatened, or endangered plants found. *Convolvulus arvensis* was the only noxious weed found, being state-listed as a noxious species.

Keywords: vascular plants, Texas, county records, range extensions, Cross Timbers

Knowledge of Texas floras is crucial for determining species composition and is important for the management and preservation of individual plant species and ecoregions across the state. Floristic data for Erath County (Fig. 1), located in the southwestern portion of the West Cross Timbers, is unknown or at best limited. Having an updated list of flora for a county is important for identifying changes in species' distributions. This can be used in management plans for conserving endangered species, documenting the spread of invasive plants, and to improve the naturalness of restoration projects.

The Cross Timbers occur from Kansas to Texas, extending south into Texas about 150 miles (Diggs et al. 1999). This forest dominated by post oak (*Quercus stellata*) and blackjack oak (*Quercus marilandica*) grows on mildly acidic, sandy soils that allows for deep water penetration further (Diggs et al. 1999). Poor agricultural practices and the suppression of fires has led to an increased dominance of weedy species, while losing native grasses and climax understory vegetation

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(Dyksterhuis 1948). There have also been invasions of woody plants such as mesquite (*Prosopis glandulosa*) and juniper (*Juniperus asheii*) in some native grasslands and forests throughout the region (Van Auken 1988).

When the Cross Timbers reach the north central boundary of Texas, it separates into two distinct sections: the East and West Cross Timbers (Dyksterhuis 1948). The West Cross Timbers extends from the Grand Prairie west to the start of the Rolling Plains, and showcases an intricate pattern of timbered areas mixed with grasslands (Diggs et al. 1999). Erath County occurs in the southwestern portion of the West Cross Timbers (Fig. 1), which has had few floristic studies in the past. The objectives of this investigation are to inventory the vascular flora from thirty-five sites in Erath County, identify introduced, endemic, threatened, rare and endangered species, as well as county records and range extensions.

MATERIALS & METHODS

Field work was conducted in Erath County over a 4.5-year period from September 2003 to April 2008. Thirty-five localities within the county were surveyed to collect plant specimens (Table 1). These sites included 12 highway right-of-ways, 14 cemeteries, three private properties, three properties owned by Tarleton State University, two rivers, and one city park. Highway right-of-ways that were sampled had wide areas of vegetation along the sides, and cemeteries were utilized due to their lack of recent disturbance. Properties were selected based on the owner's support of plant collection, while the rivers and city park allowed for sampling of wetland and aquatic species.

Specimens were processed at TSU Herbarium using standard herbarium procedures (Diggs et al. 1999). Each specimen was identified and classified as native, endemic, or introduced using *Shinner's and Mahler's Illustrated Flora of North Central Texas* (Diggs et al. 1999). Plants from Erath County were compared to those which occur on the Texas State-listed Noxious Weeds (United States Department of Agriculture (USDA) 2017), state threatened and



Figure 1. Map of Texas showing the location of Erath County (black) and surrounding counties that contain portions of the West Cross Timbers (shaded).

endangered plant species list (Texas Parks and Wildlife Department (TPWD) 2017), and rare plants of Texas (Poole et al. 2007). Distributions of taxa were compared to those published in the *Atlas of the Vascular Plants of Texas* (Turner et al. 2003a; 2003b). Based on data from the *Atlas*, species were classified as major range extensions (taxa collected in Erath County but not known from adjacent counties) or Erath County records (taxa that have been reported from adjacent counties).

Table 1. Study sites, coordinates, and nearest locality within Erath County surveyed for plant specimens.

Study Site	Coordinates	Closest Town/Intersection
Tarleton Agricultural Center	32° 14.889 N, 98° 12.602 W	0.1 mi N of Hwy 8 & College Farm Rd. Stephenville, TX
Patillo, TX	32° 12.881 N, 98° 12.208 W	1.8 mi W of intersection of Hwy 281 & CR 144. Patillo, TX
Hunewell Property	32° 12.901 N, 98° 06.147 W	2.6 mi E of intersection of Hwy 67 & CR 182. Stephenville, TX
Morgan Mill, TX, CR 163	32° 23.051 N, 98° 10.550 W	1.4 mi W of intersection of CR 163 & 281. Morgan Mill, TX
Walter's Property	32° 08.804 N, 98° 15.660 W	0.5 mi S of intersection of CR 299 & CR 298. Dublin, TX
Bishop Cemetery	32° 29.031 N, 98° 06.303 W	2 mi NW of intersection of 1189 & CR 146
Dublin, TX, CR 304	32° 05.319 N, 98° 17.680 W	Intersection of Hwy 6 & CR 304. Dublin, TX
CR 316	32° 02.017 N, 98° 17.796 W	Intersection of CR 219 & CR 316
Live Oak Cemetery	32° 05.203 N, 98° 19.485 W	On Hwy 6, 1.2 mi of intersection with Hwy 377. Dublin, TX
Dublin, TX, CR 347	32° 05.751 N, 98° 22.598 W	Intersection of CR 347 & Hwy 6. Dublin, TX
Griswald Property	32° 25.977 N, 98° 18.174 W	1 mi SE of intersection of CR 126 & Hwy 1188. Huckabay, TX
Huckabay, TX, CR 713	32° 20.495 N, 98° 16.961 W	Intersection of CR 713 & Hwy 108. Huckabay, TX
Sudman Property	32° 15.698 N, 98° 08.416 W	0.8 mi S of intersection of Hwy 377 & CR 180
Acrea Cemetery	32° 19.284 N, 98° 06.640 W	1 mi N of intersection of CR 150 & Hwy 377
Paluxy River	32° 21.267 N, 98° 01.559 W	0.2 mi N of intersection of Hwy 377 & CR 149. Bluffdale, TX
Thurber, TX, Gordon Center	32° 30.227 N, 98° 24.799 W	1 mi E of exit 367 on I-20 at Tarleton State University W. K. Gordon Center

Table 1. Cont.

Study Site	Coordinates	Closest Town/Intersection
Thurber, TX, CR 107	32° 30.236 N, 98° 25.979 W	5 mi N of intersection of CR 107 & CR 400. Thurber, TX
Indian Creek Cemetery	32° 08.070 N, 98° 08.905 W	0.9 mi E of intersection of Indian Creek Cemetery Rd & Hwy 281
Johnsville Cemetery	32° 08.756 N, 98° 01.888 W	0.4 mi E of intersection of Hwy 2481 & CR 208
CR 204	32° 08.796 N, 97° 59.494 W	1.4 mi S of intersection of Hwy 67 & CR 204
Duffau, TX, CR 213	32° 04.885 N, 98° 01.279 W	5.7 mi S of intersection of Hwy 2481 & Hwy 67. Duffau, TX
Alexander Cemetery	32° 03.490 N, 98° 12.797 W	0.4 mi SW of intersection of Hwy 914 & Hwy 6
Turnbow Cemetery	32° 00.412 N, 98° 11.807 W	0.2 mi E of intersection of CR 543 & CR 263
Purves Live Oak Cemetery	32° 00.745 N, 98° 17.606 W	0.7 mi SW of intersection of Hwy 219 & CR 317
Lingleville Cemetery	32° 14.550 N, 98° 21.964 W	0.1 mi S of intersection of Hwy 8 & CR 538
Lowell Cemetery	32° 15.271 N, 98° 28.366 W	Intersection of CR 397 & Hwy 8
Old School Hill Cemetery	32° 20.276 N, 98° 27.876 W	7 mi N of intersection of Hwy 8 & CR 397
Bunyan Cemetery	32° 09.979 N, 98° 22.446 W	0.6 mi W of intersection of CR 372 & Hwy 219. Bunyan, TX
Edna Hill, TX, CR 326	31° 57.067 N, 98° 19.695 W	Intersection of CR 326 & Hwy 1702. Edna Hill, TX
Clairette, TX	32° 02.367 N, 98° 07.450 W	CR 270 between Hwy 6 and Two Rivers Ranch
Thurber Cemetery	32° 30.674 N, 98° 25.097 W	0.1 mi S of intersection of Hwy 108 & PR 741
Oak Dale Cemetery	32° 17.127 N, 98° 14.973 W	0.1 mi W of intersection of Hwy 108 & CR 429
Stephenville City Park	32° 12.880 N, 98° 12.213 W	0.3 mi W of intersection of park drive with S Graham St
Bosque River	32° 22.360 N, 98° 19.935 W	Floodplain of river in eastern city limits of Stephenville, TX

RESULTS & DISCUSSION

This research offers data from a section of the West Cross Timbers that is floristically understudied or unknown. One hundred and nineteen species representing 50 families were identified from Erath County (Table 2). Ninety-three taxa are native and 26 are introduced. Of the native species, six are endemic to Texas, with one species, *Penstemon guadalupensis*, being endemic to the Edwards Plateau and north-central Texas. One species, *Convolvulus arvensis*, was found on the state noxious weeds list (USDA 2017). There were no rare (Poole et al. 2007), threatened, endangered, or state-listed plant species (TPWD 2017).

Of the 119 species identified, 54 are considered new county records for Erath County but also are found in adjacent counties (Table 2). Sixty-five taxa are considered major range extensions due to them not being previously found in Erath County or adjacent counties and are discussed individually by family in the following paragraphs.

FAMILY ACANTHACEAE

Ruellia caroliniensis (J.F. Gmel.) Steud. [Small-flower Ruellia] (TAC 6266) has been reported from the eastern third of Texas. This collection extends its range west to Erath County (Turner et al. 2003a). It is found in sandy open woods and open ground (Diggs et al. 1999).

FAMILY ACERACEAE

Acer negundo L. [Box-elder] (TAC 6165) has been reported from the approximate eastern third of Texas, and southward in a line from Kerr to Goliad counties. This collection extends its range west to Erath County (Turner et al. 2003a). It is found along stream banks and low woods and is the most common maple in north central Texas (Diggs et al. 1999).

FAMILY AGAVACEAE

Yucca arkansana Trel. [Arkansas Yucca] (TAC 6292) has been reported in several clusters within the eastern half of Texas. This collection extends its range to Erath County (Turner et al. 2003b). It is

Table 2. Specimens collected from Erath County, Texas. Floral records have also been included for counties surrounding Erath County (Turner et al. 2003a; 2003b), with the following abbreviations: Bosque (B), Comanche (C), Eastland (E), Hamilton (Ha), Hood (Ho), Palo Pinto (P), Somervell (S). Common names are included in brackets. Plants are listed as native (N), endemic to Texas (E), or introduced (I, Diggs et al. 1999). Tarleton State University Herbarium (TAC) accession numbers are included as well. Major range extensions are abbreviated MRE.

Family/Species/Common name	Bordering Counties	N/E/I	TAC
Acanthaceae			
<i>Ruellia caroliniensis</i> (J.F. Gmel.) Steud. [Small-flower Ruellia]	MRE	N	6266
<i>Ruellia drummondiana</i> (Nees) A. Gray [Drummond's Ruellia]	B,Ha	E	6268
Aceraceae			
<i>Acer negundo</i> L. [Box-elder]	MRE	N	6165
Agavaceae			
<i>Yucca arkansana</i> Trel. [Arkansas Yucca]	MRE	N	6292
<i>Yucca constricta</i> Buckley [Buckley's Yucca]	MRE	E	6159
Alismataceae			
<i>Echinodorus berteroi</i> (Spreng.) Fassett [Burhead]	C,Ha,P	N	6562
Amaranthaceae			
<i>Alternanthera caracasana</i> Kunth [Mat Chaff-flower]	C,Ha	N	6243
<i>Amaranthus albus</i> L. [Tumbleweed]	B	N	6246
<i>Amaranthus rudis</i> J.D. Sauer [Water-hemp]	MRE	N	6155
Apiaceae			
<i>Daucus pusillus</i> Michx. [Southwestern Carrot]	E	N	6162
<i>Hydrocotyle verticillata</i> Thunb. var. <i>triradiata</i> (A. Rich.) Fernald [Whorled Water-Pennywort]	MRE	N	6137
<i>Spermolepis inermis</i> (Nutt. ex DC.) Mathias & Constance [Spreading Scaleseed]	Ha,P	N	6284

Table 2. Cont.

Family/Species/Common name	Bordering Counties	N/E/I	TAC
Asclepiadaceae			
<i>Asclepias oenotheroides</i> Cham. & Schltdl. [Side-cluster Milkweed]	C,S	N	6293
<i>Asclepias stenophylla</i> A. Gray [Slim-leaf Milkweed]	MRE	N	6576
<i>Cynanchum racemosum</i> (Jacq.) Jacq. var. <i>unifarium</i> (Scheele) Sundell [Talayote]	P	N	6435
Asteraceae			
<i>Ambrosia trifida</i> L. var. <i>texana</i> Scheele [Giant Ragweed]	MRE	N	6310
<i>Baccharis neglecta</i> Britton [Roosevelt-weed]	MRE	N	6140
<i>Croptilon divaricatum</i> (Nutt.) Raf. [Slender Goldenweed]	MRE	N	6313
<i>Croptilon hookerianum</i> (Torr. & A. Gray) House var. <i>hookerianum</i> [Hooker's Scratchdaisy]	MRE	N	6556
<i>Croptilon hookerianum</i> (Torr. & A. Gray) House var. <i>validum</i> (Rydb.) E.B. Sm. [Hooker's Scratchdaisy]	Ho,S	N	6571
<i>Erigeron tenuis</i> Torr. & A. Gray [Slender Fleabane]	MRE	N	6475
<i>Grindelia papposa</i> G.L. Nesom & Y.B. Suh [Saw-leaf Daisy]	MRE	N	6514
<i>Helenium amarum</i> (Raf.) H. Rock var. <i>amarum</i> [Bitterweed]	E,P	N	6130
<i>Helenium microcephalum</i> DC. [Small Sneezeweed]	P	N	6559
<i>Hymenopappus artemisiifolius</i> DC. [Woolly-white]	MRE	N	6485
<i>Machaeranthera pinnatifida</i> (Hook.) Shinnars [Spiny Ironplant]	E,P	N	6148
<i>Pinaropappus roseus</i> (Less.) Less. [Small Rock-lettuce]	E,P	N	6149
<i>Senecio vulgaris</i> L. [Common Groundsel]	E	I	6136
<i>Solidago ludoviciana</i> (A. Gray) Small [Willow Goldenrod]	MRE	N	6518

Table 2. Cont.

Family/Species/Common name	Bordering Counties	N/E/I	TAC
Asteraceae (cont.)			
<i>Solidago patula</i> Muhl. var. <i>strictula</i> Torr. & A. Gray [Willow Goldenrod]	MRE	N	6144
<i>Taraxacum laevigatum</i> (Willd.) DC. [Red-seed Dandelion]	MRE	I	6526
<i>Taraxacum officinale</i> F.H. Wigg. [Common Dandelion]	MRE	I	6531
Azollaceae			
<i>Azolla caroliniana</i> Willd. [Mosquito Fern]	MRE	N	6445
Berberidaceae			
<i>Nandina domestica</i> Thunb. [Sacred-Bamboo]	MRE	I	6304
Bignoniaceae			
<i>Campsis radicans</i> (L.) Seem. ex Bureau [Common Trumpet-creeper]	MRE	N	6573
Brassicaceae			
<i>Descurainia sophia</i> (L.) Webb ex Prantl [Flixweed Tansy-Mustard]	MRE	I	6287
<i>Lesquerella gracilis</i> (Hook.) S. Watson subsp. <i>gracilis</i> (Hook.) S. Watson [White Bladderpod]	B,Ha,Ho	N	6456
<i>Myagrum perfoliatum</i> L. [Bird's-eye Cress]	MRE	I	6286
Cactaceae			
<i>Echinocereus reichenbachii</i> (Terscheck ex Walp.) F. Haage [Lace Cactus]	Ho,P	N	6161
<i>Opuntia engelmannii</i> Salm-Dyck var. <i>lindheimeri</i> (Engelm.) B.D. Parfitt & Pinkava [Texas Prickly-pear]	MRE	N	6160
<i>Opuntia leptocaulis</i> DC. [Pencil Cactus]	Ho,P	N	6507
<i>Opuntia macrorhiza</i> Engelm. [Plains Prickly-Pear]	MRE	N	6262

Table 2. Cont.

Family/Species/Common name	Bordering Counties	N/E/I	TAC
Capparaceae			
<i>Polanisia dodecandra</i> (L.) DC. subsp. <i>trachysperma</i> (Torr. & A. Gray) H.H. Iltis [Clammyweed]	P	N	6512
<i>Polanisia erosa</i> (Nutt.) H.H. Iltis [Large Clammyweed]	C	N	6276
Caprifoliaceae			
<i>Lonicera sempervirens</i> L. [Coral Honeysuckle]	MRE	N	6476
<i>Sambucus nigra</i> L. var. <i>canadensis</i> (L.) Bolli [Common Elderberry]	MRE	N	6147
Caryophyllaceae			
<i>Stellaria media</i> (L.) Vill. [Common Chickweed]	MRE	I	6131
Commelinaceae			
<i>Tradescantia ohiensis</i> Raf. [Ohio Spiderwort]	B,C,E	N	6126
Convolvulaceae			
<i>Convolvulus arvensis</i> L. [Field Bindweed]	MRE	I	6577
<i>Evolvulus nuttallianus</i> Schult. [Hairy Evolvulus]	E,S	N	6468
Crassulaceae			
<i>Sedum nuttallianum</i> Raf. [Yellow Stonecrop]	P	N	6123
Cucurbitaceae			
<i>Melothria pendula</i> L. [Drooping Melonette]	MRE	N	6431
Cyperaceae			
<i>Carex austrina</i> (Small) Mack. [Southern Caric Sedge]	MRE	N	6489
<i>Cyperus erythrorhizos</i> Muhl. [Red-root Flat Sedge]	MRE	N	6464
<i>Cyperus esculentus</i> L. [Yellow Nut-grass]	MRE	N	6544
<i>Cyperus lupulinus</i> (Spreng.) Marcks [Slender Flat Sedge]	P	N	6124
<i>Cyperus polystachyos</i> Steud. [Manyspike Flatsedge]	MRE	N	6566

Table 2. Cont.

Family/Species/Common name	Bordering Counties	N/E/I	TAC
Cyperaceae (cont.)			
<i>Cyperus rotundus</i> L. [Nut-grass]	MRE	I	6543
<i>Lipocarpa micrantha</i> (Vahl) G.C. Tucker [Small-flowered Halfchaff Sedge]	MRE	N	6141
Dryopteridaceae			
<i>Woodsia obtusa</i> (Spreng.) Torr. subsp. <i>occidentalis</i> Windham [Common Woodsia]	P	N	6442
Euphorbiaceae			
<i>Chamaesyce missurica</i> (Raf.) Shinnery [Prairie Spurge]	E, Ho, S	N	6498
Fabaceae			
<i>Albizia julibrissin</i> Durazzo [Mimosa]	MRE	I	6572
<i>Astragalus nuttallianus</i> DC. var. <i>pleianthus</i> (Shinnery) Barneby [Turkey-pea]	MRE	N	6525
<i>Desmanthus illinoensis</i> (Michx.) MacMill. ex B.L. Rob. & Fernald [Illinois Bundleflower]	C, Ha	N	6439
<i>Desmodium tweedyi</i> Britton [Tweedy's Tick-clover]	P	N	6545
<i>Galactia volubilis</i> (L.) Britton [Downy Milk-pea]	MRE	N	6488
<i>Gleditsia triacanthos</i> L. [Common Honey-locust]	MRE	N	6434
<i>Lupinus texensis</i> Hook. [Texas Bluebonnet]	B, C, E, Ha, Ho	E	6128
<i>Medicago minima</i> (L.) L. [Bur-clover]	P	I	6132
<i>Medicago polymorpha</i> L. [California Bur-clover]	MRE	I	6156
<i>Strophostyles helvula</i> (L.) Elliott [Amberique-bean]	E	N	6277
Iridaceae			
<i>Sisyrinchium minus</i> Engelm. & A. Gray [Least Blue-eyed-grass]	MRE	N	6285

Table 2. Cont.

Family/Species/Common name	Bordering Counties	N/E/I	TAC
Juglandaceae			
<i>Juglans nigra</i> L. [Black Walnut]	MRE	N	6427
Liliaceae			
<i>Allium canadense</i> L. var. <i>canadense</i> [Canada Garlic]	MRE	N	6164
<i>Allium canadense</i> L. var. <i>hyacinthoides</i> (Bush) Ownbey & Aase [Hyacinth Meadow Garlic]	MRE	N	6133
<i>Muscari neglectum</i> Guss. ex Ten. [Starch Grape-hyacinth]	C	I	6127
Malvaceae			
<i>Abutilon fruticosum</i> Guill. & Perr. [Indian-mallow]	S	N	6122
<i>Abutilon theophrasti</i> Medik. [Indian-mallow]	C	I	6553
<i>Malva neglecta</i> Wallr. [Common Mallow]	Ha	I	6146
<i>Sida spinosa</i> L. [Prickly Sida]	MRE	N	6588
Moraceae			
<i>Morus alba</i> L. [White Mulberry]	MRE	I	6452
<i>Morus rubra</i> L. [Red Mulberry]	MRE	N	6134
Nyctaginaceae			
<i>Mirabilis jalapa</i> L. [Four-o'clock]	Ha	I	6590
Oleaceae			
<i>Ligustrum japonicum</i> Thunb. [Wax-leaf Ligustrum]	MRE	I	6429
Oxalidaceae			
<i>Oxalis drummondii</i> A.Gray [Drummond's Oxalis]	C,S	E	6505
Phytolaccaceae			
<i>Phytolacca americana</i> L. [Pokeweed]	E	N	6446

Table 2. Cont.

Family/Species/Common name	Bordering Counties	N/E/I	TAC
Poaceae			
<i>Aristida oligantha</i> Michx. [Oldfield Threawn]	B,C,E	N	6250
<i>Avena fatua</i> L. [Wild Oats]	MRE	I	6301
<i>Avena sativa</i> L. [Common Oats]	MRE	I	6129
<i>Bouteloua barbata</i> Lag. [Six Weeks Grama]	MRE	N	6578
<i>Bromus hordeaceus</i> L. [Soft Chess]	MRE	I	6535
<i>Bromus tectorum</i> L. var. <i>tectorum</i> [Cheat Grass]	MRE	I	5609
<i>Echinochloa muricata</i> (P. Beauv.) Fernald var. <i>microstachya</i> Wiegand [Rough Barnyardgrass]	MRE	N	6151
<i>Muhlenbergia schreberi</i> J.F. Gmel. [Nimble-will]	MRE	N	5624
<i>Pascopyrum smithii</i> (Rydb.) Á. Löve [Western Wheat Grass]	C,P	N	6549
<i>Poa annua</i> L. [Annual Bluegrass]	MRE	I	6157
<i>Sporobolus cryptandrus</i> (Torr.) A. Gray [Sand Dropseed]	B,C,E,P,S	N	6459
<i>Trisetum interruptum</i> Buckley [Prairie Trisetum]	E,Ha	N	6163
Polemoniaceae			
<i>Phlox pilosa</i> L. subsp. <i>pilosa</i> [Downy Phlox]	MRE	N	6480
Polygonaceae			
<i>Eriogonum multiflorum</i> Benth. [Heart-sepal Wild Buckwheat]	C,E	N	6270
<i>Polygonum virginianum</i> L. [Jumpseed]	MRE	N	6142
Potamogetonaceae			
<i>Potamogeton diversifolius</i> Raf. [Water-thread Pondweed]	MRE	N	6433

Table 2. Cont.

Family/Species/Common name	Bordering Counties	N/E/I	TAC
Pteridaceae			
<i>Pellaea atropurpurea</i> (L.) Link [Purple Cliff-brake]	Ha, Ho, P, S	N	6261
Ranunculaceae			
<i>Clematis terniflora</i> DC. [Sweet-autumn Clematis]	MRE	I	6138
<i>Delphinium carolinianum</i> Walter subsp. <i>virescens</i> (Nutt.) R.E. Brooks [Prairie Larkspur]	B, E, P	N	6282
Rhamnaceae			
<i>Ziziphus obtusifolia</i> (Hook. ex. Torr. & A. Gray.) A. Gray [Lotebush]	P	N	6273
Rosaceae			
<i>Prunus rivularis</i> Scheele [Thicket Plum]	B	N	6158
Rubiaceae			
<i>Sherardia arvensis</i> L. [Spurwort]	S	I	6154
Rutaceae			
<i>Poncirus trifoliata</i> (L.) Raf. [Bitter Orange]	MRE	I	6145
Sapindaceae			
<i>Sapindus saponaria</i> L. var. <i>drummondii</i> (Hook. & Arn.) L.D. Benson [Western Soapberry]	B, C, Ha	N	6150
Scrophulariaceae			
<i>Penstemon guadalupensis</i> A. Heller [Guadalupe Penstemon]	C	E	6125
Solanaceae			
<i>Capsicum annuum</i> L. var. <i>glabriusculum</i> (Dunal) Heiser & Pickersgill [Bird Pepper]	MRE	N	6139
Ulmaceae			
<i>Celtis laevigata</i> Willd. var. <i>reticulata</i> Torr. [Net-leaf Hackberry]	C, P	N	6135
Urticaceae			
<i>Boehmeria cylindrica</i> (L.) Sw. [Bog-hemp]	MRE	N	6555

Table 2. Cont.

Family/Species/Common name	Bordering Counties	N/E/I	TAC
Valerianaceae			
<i>Valerianella radiata</i> (L.) Dufr. [Beaked Cornsalad]	B,Ha,S	N	6152
Verbenaceae			
<i>Aloysia gratissima</i> (Gillies & Hook.) Tronc. [Common Beebush]	P	N	6153
<i>Lantana urticoides</i> Hayek [Common Lantana]	S	N	6279
<i>Verbena neomexicana</i> (A. Gray) Small [Hillside Vervain]	MRE	N	6143
Vitaceae			
<i>Vitis monticola</i> Buckley [Sweet Mountain Grape]	P	E	6579

found in rocky limestone or sandy soils (Diggs et al. 1999).

Yucca constricta Buckley [Buckley's Yucca] (TAC 6159) has been reported from the central region of Texas, extending to southern Texas in a line along the southern border from Val Verde to Zapata counties. This collection extends its range north to Erath County (Turner et al. 2003a). It is found on limestone outcrops and rocky prairies and is endemic to Texas (Diggs et al. 1999).

FAMILY AMARANTHACEAE

Amaranthus rudis J.D. Sauer [Water-hemp] (TAC 6155) has been reported in the Texas panhandle and sporadically throughout Texas, from Grayson to Kerr counties. This collection extends its range in central Texas to Erath County (Turner et al. 2003a). It is found in low, moist fields and is one of the most abundant native weeds of late summer and fall in Texas (Diggs et al. 1999).

FAMILY APIACEAE

Hydrocotyle verticillata Thunb. var. *triradiata* (A. Rich.) Fernald [Whorled Water-Pennywort] (TAC 6137) has been reported throughout eastern third and central parts of Texas, along with few reports from the southern and western tips of the state. This collection extends its range

northwest to Erath County (Turner et al. 2003a). It is found in wet places (Diggs et al. 1999).

FAMILY ASCLEPIADACEAE

Asclepias stenophylla A. Gray [Slim-leaf Milkweed] (TAC 6576) has been reported from the western third of Texas, the Panhandle, and Cook, Grayson, and Tarrant counties. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003a). It is found in prairies and open ground (Diggs et al. 1999).

FAMILY ASTERACEAE

Ambrosia trifida L. var. *texana* Scheele [Giant Ragweed] (TAC 6310) has been reported sporadically throughout Texas, and in a line from Kimble to Harris counties. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003a). It is found in disturbed areas (Diggs et al. 1999).

Baccharis neglecta Britton [Roosevelt-weed] (TAC 6140) has been reported along the southern border from Terrell to Cameron counties, and throughout central Texas north to Grayson County. This collection extends its range northwest to Erath County (Turner et al. 2003a). It is found in calcareous soils and is the most common *Baccharis* in most of north-central Texas (Diggs et al. 1999).

Croptilon divaricatum (Nutt.) Raf. [Slender Goldenweed] (TAC 6313) has been reported as widespread in the eastern third of Texas. This collection extends its range west to Erath County (Turner et al. 2003a). It is found in disturbed areas with sandy soils (Diggs et al. 1999).

Croptilon hookerianum (Torr. & A. Gray) House var. *hookerianum* [Hooker's Scratchdaisy] (TAC 6556) has been reported in central and south-central Texas. This collection extends its range north to Erath County (Turner et al. 2003a). It is found in disturbed areas with sandy soils (Diggs et al. 1999).

Erigeron tenuis Torr. & A. Gray [Slender Fleabane] (TAC 6475) has been reported in the eastern third of Texas and central Texas. This collection extends its range northwest to Erath County (Turner et al. 2003a). It is found in sandy, open woods and roadsides (Diggs et al. 1999).

Grindelia papposa G.L. Nesom & Y.B. Suh [Saw-leaf Daisy] (TAC 6514) has been reported throughout north-central Texas and the western half of Texas. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003a). It is found in disturbed areas and is widespread in Texas (Diggs et al. 1999).

Hymenopappus artemisiifolius DC. [Woolly-white] (TAC 6485) has been reported in the eastern third of Texas, and in a few counties in north-central Texas. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003a). It is found in sandy soils (Diggs et al. 1999).

Solidago ludoviciana (A. Gray) Small [Willow Goldenrod] (TAC 6518) has been reported throughout the eastern third of Texas. This collection extends its range west to Erath County (Turner et al. 2003a). It is found in disturbed areas with usually sandy soils (Diggs et al. 1999).

Solidago patula Muhl. var. *strictula* Torr. & A. Gray [Willow Goldenrod] (TAC 6144) has been reported in Wood County in eastern Texas. This collection extends its range west to Erath County (Turner et al. 2003a). It is found in disturbed areas (Diggs et al. 1999).

Taraxacum laevigatum (Willd.) DC. [Red-seed Dandelion] (TAC 6526) has been reported sporadically throughout central and north-central Texas. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003a). It is found in lawns, disturbed areas, and under trees in towns (Diggs et al. 1999).

Taraxacum officinale F.H. Wigg. [Common Dandelion] (TAC 6531) has been reported throughout west, north, and central Texas. This

collection extends its range in north-central Texas to Erath County (Turner et al. 2003a). It is found in lawns and disturbed areas in towns (Diggs et al. 1999).

FAMILY AZOLLACEAE

Azolla caroliniana Willd. [Mosquito Fern] (TAC 6445) has been reported mostly in the eastern third of Texas, extending along the coast into south Texas. This collection extends its range west to Erath County (Turner et al. 2003b). It is found in still waters of ponds, lakes, or slow-moving streams (Diggs et al. 1999).

FAMILY BERBERIDACEAE

Nandina domestica Thunb. [Sacred-Bamboo] (TAC 6304) has been reported in a few groups of counties in north-central, southeast, and mid-Texas. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003a). It is widely cultivated and escapes into sandy woods (Diggs et al. 1999).

FAMILY BIGNONIACEAE

Campsis radicans (L.) Seem. ex Bureau [Common Trumpet-creeper] (TAC 6573) has been reported in southeast and central Texas. This collection extends its range north to Erath County (Turner et al. 2003a). It is found in stream banks, disturbed ground, along fences, and is also cultivated (Diggs et al. 1999).

FAMILY BRASSICACEAE

Descurainia sophia (L.) Webb ex Prantl [Flixweed Tansy-Mustard] (TAC 6287) has been reported from the western half of Texas, and is prevalent in the Panhandle. This collection extends its range east to Erath County (Turner et al. 2003a). It is found on roadsides and waste ground in various soils (Diggs et al. 1999).

Myagrum perfoliatum L. [Bird's-eye Cress] (TAC 6286) has been reported from Delta and Hill counties. This collection extends its range west to Erath County (Turner et al. 2003a). It is found in fields and roadsides in black clay (Diggs et al. 1999).

FAMILY CACTACEAE

Opuntia engelmannii Salm-Dyck var. *lindheimeri* (Engelm.) B.D. Parfitt & Pinkava [Texas Prickly-pear] (TAC 6160) has been reported along the southern part of Texas from Brewster to Refugio counties, and is widespread in central Texas up to Dallas County. This collection extends its range northwest to Erath County (Turner et al. 2003a). It is found in sandy, gravelly, alluvial soils and grasslands (Diggs et al. 1999).

Opuntia macrorhiza Engelm. [Plains Prickly-pear] (TAC 6262) has been reported in the Panhandle and in a cluster in central Texas, as well as sporadically in north-central Texas. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003a). It is found in sandy or rocky soils (Diggs et al. 1999).

FAMILY CAPRIFOLIACEAE

Lonicera sempervirens L. [Coral Honeysuckle] (TAC 6476) has been reported throughout eastern Texas and in a few counties in central Texas. This collection extends its range northwest to Erath County (Turner et al. 2003a). It is found in stream banks, hillside woods, and is cultivated (Diggs et al. 1999).

Sambucus nigra L. var. *canadensis* (L.) Bolli [Common Elderberry] (TAC 6147) has been reported from the eastern half of Texas, and in Hutchinson and Hemphill counties in the panhandle. This collection extends its range west to Erath County (Turner et al. 2003a). It is found in stream bottoms and ditch banks in the shade or sun (Diggs et al. 1999).

FAMILY CARYOPHYLLACEAE

Stellaria media (L.) Vill. [Common Chickweed] (TAC 6131) has been reported mainly in the eastern half of Texas, with various occurrences in west Texas and in the Panhandle. This collection extends its range in central Texas to Erath County (Turner et al. 2003a). It is a widespread weed in stream bottoms, lawns, and disturbed sites (Diggs et al. 1999).

FAMILY CONVULVULACEAE

Convolvulus arvensis L. [Field Bindweed] (TAC 6577) has been reported in many counties throughout Texas, as well as counties in north-central Texas. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003a). It is found in roadsides and disturbed sites, and is a problematic weed in gardens that is difficult to eradicate (Diggs et al. 1999).

FAMILY CUCURBITACEAE

Melothria pendula L. [Drooping Melonette] (TAC 6431) has been reported from the southeastern half of Texas. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003a). It is found in wooded areas and exposed sites (Diggs et al. 1999).

FAMILY CYPERACEAE

Carex australis (Small) Mack. [Southern Caric Sedge] (TAC 6489) has been reported throughout north-central and central Texas. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003b). It is found in open prairies alfisols, and occasionally in mollisols, vertisols, and histosols throughout north-central Texas (Diggs et al. 1999).

Cyperus erythrorhizos Muhl. [Red-root Flat Sedge] (TAC 6464) has been reported from the eastern half of Texas. This collection extends its range west to Erath County (Turner et al. 2003b). It is found in marshy areas (Diggs et al. 1999).

Cyperus esculentus L. [Yellow Nut-grass] (TAC 6544) has been reported throughout Texas. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003b). It is found in sandy, disturbed soils (Diggs et al. 1999).

Cyperus polystachyos Steud. [Manyspike Flatsedge] (TAC 6566) has been reported in the eastern third of Texas and south-central Texas. This collection extends its range northwest to Erath County (Turner et al. 2003b). It is found in stream banks with moist sand (Diggs et al.

1999).

Cyperus rotundus L. [Nut-grass] (TAC 6543) has been reported in the southeast portion of Texas and sporadically in the other regions of the state. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003b). It is found in disturbed waste or lawn areas (Diggs et al. 1999).

Lipocarpa micrantha (Vahl) G.C. Tucker [Small-flowered Halfchaff Sedge] (TAC 6141) has been reported in Jeff Davis and Lee counties. This collection extends its range north to Erath County (Turner et al. 2003b). It is found in moist, sandy soils in seasonally wet areas (Diggs et al. 1999).

FAMILY FABACEAE

Albizia julibrissin Durazzo [Mimosa] (TAC 6572) has been reported in the eastern half of Texas, including north-central Texas. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003a). It is commonly cultivated, and occasionally escapes to invade native habitats (Diggs et al. 1999).

Astragalus nuttallianus DC. var. *pleianthus* (Shinners) Barneby [Turkey-pea] (TAC 6525) has been reported in central and eastern Texas. This collection extends its range northwest to Erath County (Turner et al. 2003a). It is found in calcareous soils, prairies, and open woodlands (Diggs et al. 1999).

Galactia volubilis (L.) Britton [Downy Milk-pea] (TAC 6488) has been reported in the eastern half of Texas, including north-central Texas. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003a). It is found in dry open woods, thickets, and semi-open areas (Diggs et al. 1999).

Gleditsia triacanthos L. [Common Honey-locust] (TAC 6434) has been reported from the eastern half of Texas, as well as the western third of Texas. This collection extends its range in central Texas to Erath County (Turner et al. 2003a). It is found in stream bottoms, and

also invades disturbed sandy slopes and open ground (Diggs et al. 1999).

Medicago polymorpha L. [California Bur-clover] (TAC 6156) has been reported in the eastern and south-eastern parts of Texas. It is mainly found in the eastern half of Texas. This collection extends its range west to Erath County (Turner et al. 2003a). It is found in sandy or less commonly clayey pastures, lawns, and roadsides (Diggs et al. 1999).

FAMILY IRIDACEAE

Sisyrinchium minus Engelm. & A. Gray [Least blue-eyed-grass] (TAC 6285) has been reported in the eastern half of Texas. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003b). It is found in sandy soils (Diggs et al. 1999).

FAMILY JUGLANDACEAE

Juglans nigra L. [Black Walnut] (TAC 6427) has been reported sporadically in the eastern half of Texas. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003a). It is found in stream bottom woods on calcium rich soils (Diggs et al. 1999).

FAMILY LILIACEAE

Allium canadense L. var. *canadense* [Canada Garlic] (TAC 6164) has been reported as widespread throughout the eastern third of Texas. This collection extends its range west to Erath County (Turner et al. 2003a). It is found in sandy open woods, fields, roadsides, and other open areas (Diggs et al. 1999).

Allium canadense L. var. *hyacinthoides* (Bush) Ownbey & Aase [Hyacinth Meadow Garlic] (TAC 6133) has been reported as widespread throughout the eastern half of Texas. This collection extends its range in central Texas to Erath County (Turner et al. 2003a). It is found in calcareous prairies or infrequently in sandy soils, in sun or shade (Diggs et al. 1999).

FAMILY MALVACEAE

Sida spinosa L. [Prickly Sida] (TAC 6588) has been reported in the eastern half of Texas. This collection extends its range west to Erath County (Turner et al. 2003a). It is found in disturbed and waste areas (Diggs et al. 1999).

FAMILY MORACEAE

Morus alba L. [White Mulberry] (TAC 6452) has been reported from counties in north-central, central, and south-central Texas. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003a). It is established in thickets in limestone areas (Diggs et al. 1999).

Morus rubra L. [Red Mulberry] (TAC 6134) has been reported as widespread in the eastern half of Texas, and in a line along the southern border from Terrell to Maverick counties. It has also been reported from Carson and Hemphill counties in the Panhandle region. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003a). It is found in stream bottoms and less often on slopes (Diggs et al. 1999).

FAMILY OLEACEAE

Ligustrum japonicum Thunb. [Wax-leaf Ligustrum] (TAC 6429) has been reported mainly in a line running north-south from Grayson to Bexar counties, as well as a few counties in far east and far west Texas. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003a). It is cultivated and escapes (Diggs et al. 1999).

FAMILY POACEAE

Avena fatua L. [Wild Oats] (TAC 6301) has been reported as widespread throughout Texas. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003b). It is found on roadsides and other disturbed areas (Diggs et al. 1999).

Avena sativa L. [Common Oats] (TAC 6129) has been reported as widespread throughout the southern two-thirds of Texas. This

collection extends its range in north-central Texas to Erath County (Turner et al. 2003b). It is commonly found as a weed on roadsides and other disturbed areas throughout Texas (Diggs et al. 1999).

Bouteloua barbata Lag. [Six Weeks Grama] (TAC 6578) has been reported in the western and southern regions of Texas, and sporadically in central Texas. This collection extends its range in central Texas to Erath County (Turner et al. 2003b). It is found in dry grasslands, roadsides, and wasteplaces in typically sandy soils (Diggs et al. 1999).

Bromus hordeaceus L. [Soft Chess] (TAC 6535) has been reported from central Texas, Crockett County, and in north-central Texas in Denton County. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003b). It is found in disturbed sites and was first found in Texas as a weed at Denton Agricultural Experiment Station in 1947 (Diggs et al. 1999).

Bromus tectorum L. var. *tectorum* [Cheat Grass] (TAC 5609) has been reported in the Panhandle, western, central, and eastern regions of Texas. This collection extends its range to north-central Texas with Erath County (Turner et al. 2003b). It is found in disturbed sites, roadsides, and railroads (Diggs et al. 1999).

Echinochloa muricata (P. Beauv.) Fernald var. *microstachya* Wiegand [Rough Barnyardgrass] (TAC 6151) has been reported in the eastern third and western half of Texas. This collection extends its range in central Texas to Erath County (Turner et al. 2003b). It is found in low, moist areas (Diggs et al. 1999).

Muhlenbergia schreberi J.F. Gmel. [Nimble-will] (TAC 5624) has been reported throughout eastern and central Texas. This collection extends its range to north-central Texas with Erath County (Turner et al. 2003b). It is found in woods and thickets (Diggs et al. 1999).

Poa annua L. [Annual Bluegrass] (TAC 6157) has been reported throughout the eastern half of Texas, three counties in the western third, and Randall and Briscoe counties in the Panhandle region. This

collection extends its range west to Erath County (Turner et al. 2003b). It is found in disturbed sites (Diggs et al. 1999).

FAMILY POLEMONIACEAE

Phlox pilosa L. subsp. *pilosa* [Downy Phlox] (TAC 6480) has been reported throughout the eastern third of Texas. This collection extends its range west to Erath County (Turner et al. 2003a). It is found in prairies and open woods (Diggs et al. 1999).

FAMILY POLYGONACEAE

Polygonum virginianum L. [Jumpseed] (TAC 6142) has been reported in a few areas in the eastern third of Texas. This collection extends its range west to Erath County (Turner et al. 2003a). It is found in woods, stream bottoms, or lower slopes (Diggs et al. 1999).

FAMILY POTAMOGETONACEAE

Potamogeton diversifolius Raf. [Water-thread Pondweed] (TAC 6433) has been reported mainly from the eastern half of Texas, with a few occurrences in the panhandle and west Texas. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003b). It is found in aquatic areas (Diggs et al. 1999).

FAMILY RANUNCULACEAE

Clematis terniflora DC. [Sweet-autumn Clematis] (TAC 6138) has been reported sporadically in the eastern half of Texas, in a total of 10 counties. This collection extends its range in north-central Texas to Erath County (Turner et al. 2003a). It is frequently cultivated as an ornamental and escapes (Diggs et al. 1999).

FAMILY RUTACEAE

Poncirus trifoliata (L.) Raf. [Bitter Orange] (TAC 6145) has been reported mainly in southeastern Texas, and in Grayson, Dallas, and Tarrant counties to the north of that range. This collection extends its range northwest to Erath County (Turner et al. 2003a). It was cultivated, escaped, and has naturalized in low woods at the base of bluffs (Diggs et al. 1999).

FAMILY SOLANACEAE

Capsicum annuum L. var. *glabriusculum* (Dunal) Heiser & Pickersgill [Bird Pepper] (TAC 6139) has been reported in the southeastern region and southern tip of Texas. This collection extends its range northwest to Erath County (Turner et al. 2003a). It was cultivated and has been reported as wild in numerous counties (Diggs et al. 1999).

FAMILY URTICACEAE

Boehmeria cylindrica (L.) Sw. [Bog-hemp] (TAC 6555) has been reported in east and central Texas, as well as Hutchinson and Hamphill counties in the panhandle. This collection extends its range to north-central Texas with Erath County (Turner et al. 2003a). It is found in wet areas and low woods along streams (Diggs et al. 1999).

FAMILY VERBENACEAE

Verbena neomexicana (A. Gray) Small [Hillside Vervain] (TAC 6143) has been reported in southwestern Texas in Jeff Davis, Presidio, and Brewster counties. This collection extends its range east to Erath County (Turner et al. 2003a). It is found in rocky areas (Diggs et al. 1999).

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