

For the Love of Grass III

*Power Botanizing in Kansas,
Oklahoma and Texas*



By

*Larry Holzworth, Wendall Oaks, Bob
MacLauchlan, Fred Gaffney and Curtis Sharp*

May, 2010

For the Love of Grass - II

Power Botanizing in Kansas, Oklahoma and Texas

Our third, "For the Love of Grass" trek in May 2010 saw some slight change in personal. Pressing, last minute business forced our organizing power botanist, Jack Carlson, to bail out. While his absence was certainly missed, equally powerful Larry Holzworth stepped into the leadership, even though he was 'out of his botanical element'. He was ably assisted by a returnee from Trek I, Wendall Oaks, whose Southwest exposure paid big dividends, and newcomer Fred Gaffney. Fred's lack of instant identification ability was replaced by his patience to tediously sort through the plant parts and arrive at the correct answer. Bob, with a pair of new knees, and Curtis with his note pad rounded out the membership.

Our rendezvous in Wichita, KS on May 9 went flawlessly. We reviewed our agenda, prepared by Carlson. It included about a dozen identified grasslands, the farm of a retired NRCS employee, and a Plant Materials Center. Collectively, 16 sites were inventoried. Four were en-route from one grassland to another, at varying speeds of 1 to 50 miles per hour. We traveled a total of 1,500 miles in seven days, correctly or incorrectly identified 575 plants, saw several sunsets, and thoroughly enjoyed ourselves.

Power Botanizing, using the Carlson/Holzworth convention of 2009, means identifying all plant species found by group members at the stop, and the group cannot leave until it believes the inventory is complete. Unfortunately, this was rarely possible; rain, miles to travel before we sleep and darkness being our primary enemies.



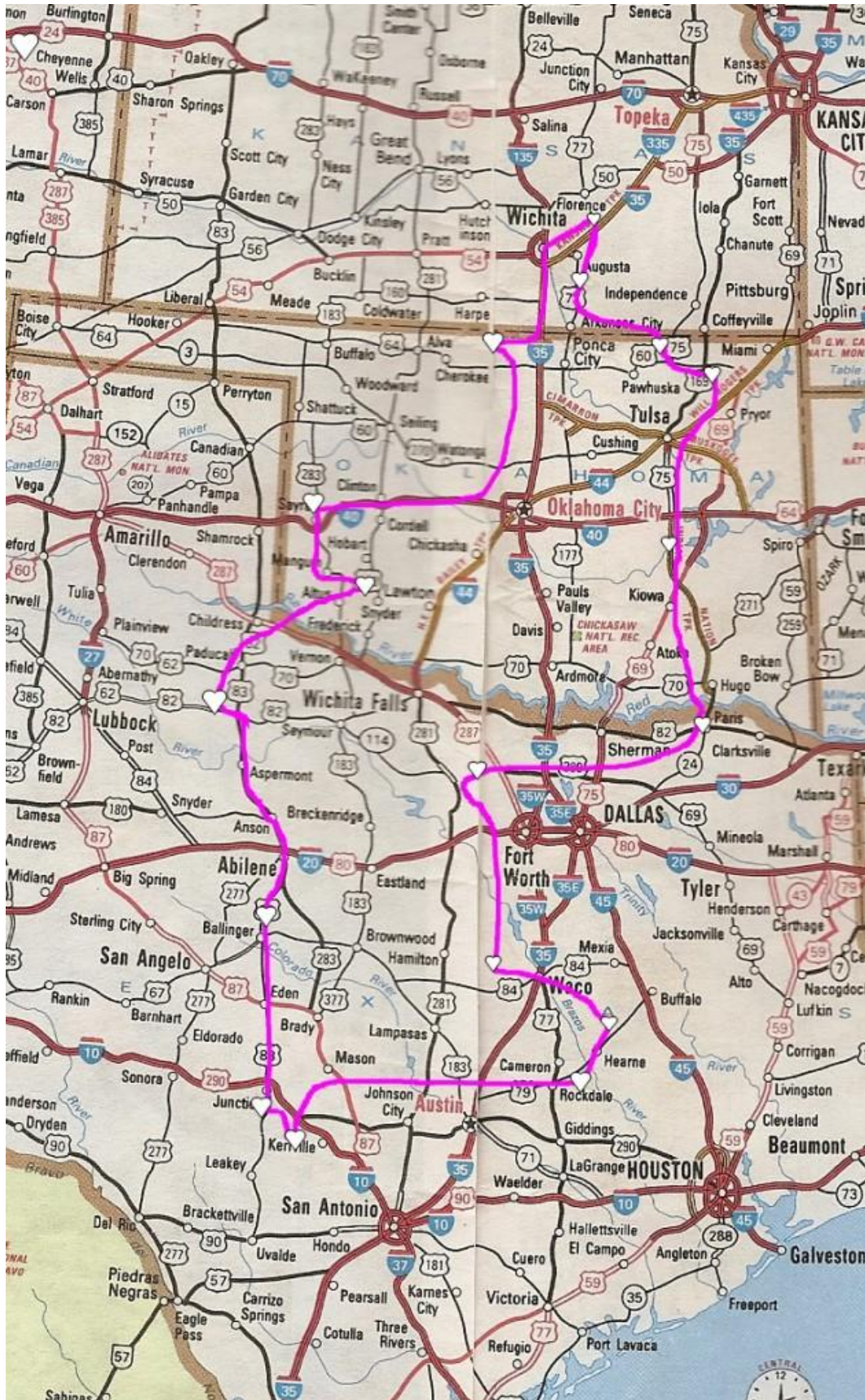
We were delighted Fred Gaffney joined us. Not only was his botanizing excellent, he introduced us to a more proper attire for field work - really high top boots, shown to the left. He assured us that they would protect him from chiggers, snakes and all manner of other grass dwelling critters. He was correct, not a bite. Unfortunately, no statistical analysis is possible since no other trek member was bitten.

Although these treks got started "For the Love of Grass", this one was dominated by the number of forbs and grass-like species. While the team was mesmerized by the beauty of the wildflowers, absence of the number of grass species could be due to previous land management practices, recent weather patterns making the warm season grasses less apparent, such as ample spring rainfall favoring the annuals, or other reasons.

Our route is shown on page 3. We went generally south from Wichita on the eastern leg, returning north on the western leg.

An item of envy

2010 Trek Route



Inventory 1 - El Dorado State Park, El Dorado, KS (May 10)

El Dorado Reservoir is located at the southern edge of the scenic Flint Hills in Butler County, straddling MLRAs Central Loess Plains, and Bluestem Hills which supports mid and tall grass plant communities. Current vegetative cover consisted of mixed trees, grasses and forbs, with areas of open savanna type vegetation. The park consists of nearly 1,100 campsites that range from primitive to full utility hookups, group picnic shelters, as well as a trail system consisting of hiking, biking and equestrian trails.



Although rain welcomed us to El Dorado, we identified 50 plants:



Dalea purpurea, purple prairie clover



Achillea millefolium var. *occidentalis*, Western yarrow.

Grasses

Andropogon gerardii Vitman

Bouteloua dactyloides (Nutt.) J.T. Columbus

Bromus inermis Leyss.

Bromus tectorum L.

Dichanthelium oligosanthes (Schult.) Gould var. *scribnerianum* (Nash) Gould

Hordeum pusillum Nutt.

Panicum virgatum L.

Plantago virginica L.

Poa pratensis L.

Schedonorus phoenix (Scop.) Holub

Schizachyrium scoparium (Michx.) Nash

Sorghastrum nutans (L.) Nash

big bluestem

buffalograss

smooth brome

cheatgrass

Scribner's rosette grass

little barley

switchgrass

red seed plantain

Kentucky bluegrass

tall fescue

little bluestem

Indiangrass

Forbs

<i>Achillea millefolium</i> L. var. <i>occidentalis</i> DC.	western yarrow
<i>Ambrosia trifida</i> L.	great ragweed
<i>Antennaria parlinii</i> Fernald	Parlin's pussytoes
<i>Asclepias speciosa</i> Torr.	showy milkweed
<i>Asclepias</i> spp. L.	milkweed
<i>Baptisia australis</i> (L.) R. Br.	blue wild indigo
<i>Baptisia bracteata</i> Muhl. ex Elliot v. <i>leucophaea</i> (Nutt.) Kart. & Gang.	longbract wild indigo
<i>Carex</i> spp. L.	sedge
<i>Cirsium texanum</i> Buckley	Texas thistle
<i>Dalea purpurea</i> Vent.	purple prairie clover
<i>Echinacea</i> spp. Moench	purple coneflower
<i>Erigeron bellidiastrum</i> Nutt.	western daisy fleabane
<i>Erodium texanum</i> A. Gray	Texas stork's bill
<i>Galium aparine</i> L.	stickywilly
<i>Gleditsia triacanthos</i> L.	honeylocust
<i>Helianthus</i> L.	sunflower
<i>Lupinus argenteus</i> Pursh	silvery lupine
<i>Medicago lupulina</i> L.	black medic
<i>Medicago sativa</i> L.	alfalfa
<i>Melilotus officinalis</i> (L.) Lam.	yellow sweetclover
<i>Oxalis stricta</i> L.	common yellow woodsorrel
<i>Pediomelum cuspidatum</i> (Pursh) Rydb.	largebract Indian breadroot
<i>Rumex</i> L.	dock
<i>Tradescantia occidentalis</i> (Britton) Smyth	prairie spiderwort
<i>Tradescantia ohiensis</i> Raf.	common spiderwort
<i>Trifolium repens</i> L.	white clover
<i>Zigadenus nuttallii</i> (A. Gray) S. Watson	Nuttall's deathcamas

Woody Plants

<i>Celastrus scandens</i> L.	American bittersweet
<i>Cercis canadensis</i> L.	redbud
<i>Cornus drummondii</i> C.A. Mey.	roughleaf dogwood
<i>Pinus echinata</i> Mill.	shortleaf pine
<i>Quercus macrocarpa</i> Michx.	bur oak
<i>Quercus muehlenbergii</i> Engelm.	chinkapin oak
<i>Rhus glabra</i> L.	smooth sumac
<i>Robinia pseudoacacia</i> L.	black locust
<i>Symphoricarpos orbiculatus</i> Moench	coralberry
<i>Toxicodendron radicans</i> (L.) Kuntze	eastern poison ivy
<i>Ulmus</i> sp. L.	elm

Inventory 2 - En Route between stop 1 and 3 (May 10)

As we turned south the weather improved and the potential for picture taking overwhelmed driver Wendall, which also served as a quick inventory stop by PB's Holzworth and Gaffney. The scribe was instructed to start writing.



Glandularia canadensis, rose mock vervain



What's so funny; just tell me what it is?

Forbs

Allium canadense L.

Commelina dianthifolia Delile

Coreopsis grandiflora Hogg ex Sweet

Dichanthelium oligosanthes (Schult.) Gould var.
scribnerianum (Nash) Gould

Glandularia canadensis (L.) Nutt.

Oenothera pallida Lindl. ssp. *runcinata* (Engelm.) Munz & W. Klein

Penstemon cobaea Nutt.

Rubus allegheniensis Porter

Sisyrinchium campestre E.P. Bicknell

Verbascum thapsus L.

meadow garlic

birdbill dayflower

large flower tickseed

Scribner's rosette grass

rose mock vervain

pale evening primrose

cobaea beardtongue

Allegheny blackberry

prairie blue-eyed grass

common mullein

Inventory 3 - The Nature Conservancy's Tallgrass Prairie Preserve, Osage County (May 10)

This tall grass prairie is split into MLRAs; Bluestem Hills and Cross Timbers. The potential native vegetation is tall grass prairie and open stand of trees with an understory of mid and tall grasses, forbs, and low woody plants. According to the Nature Conservancy literature it



is the largest protected remnant of tallgrass prairie left on earth. Biodiversity threats include habitat fragmentation and loss, current grazing and fire practices, invasive plant species such as sericea lespedeza and eastern red cedar, and stream degradation due to land management practices and soil erosion. The Trek Team was somewhat disappointed in the contamination of what might have been at one time tall grass prairie.

Grasses

Dichanthelium oligosanthes (Schult.) Gould var. *scribnerianum* (Nash) Gould

Hordeum pusillum Nutt.

Koeleria macrantha (Ledeb.) Schult.

Panicum virgatum L.

Phalaris caroliniana Walter

Poa pratensis L.

Schizachyrium scoparium (Michx.) Nash

Scribner's rosette grass

little barley

prairie Junegrass

switchgrass

Carolina canarygrass

Kentucky bluegrass

little bluestem



Zigadenus nuttallii. Nuttall's death



Symphoricarpos orbiculatus, coralberry

Forbs

Achillea millefolium L.

Ambrosia psilostachya DC.

Arnoglossum plantagineum Raf.

Carex spp. L.

Coreopsis grandiflora Hogg ex Sweet

Desmodium grahamii A. Gray

Erigeron philadelphicus L.

Lespedeza capitata Michx.

Lupinus L.

Medicago sativa L.

Nothocalais cuspidata (Pursh) Greene

Oxalis stricta L.

Oxalis violacea L.

common yarrow

Cuman ragweed

groovestem Indian plantain

sedge

largeflower tickseed

Graham's ticktrefoil

Philadelphia fleabane

roundhead lespedeza

lupine

alfalfa

prairie false dandelion

common yellow woodsorrel

violet woodsorrel

<i>Pediomelum cuspidatum</i> (Pursh) Rydb.	largebract Indian breadroot
<i>Physalis longifolia</i> Nutt.	longleaf groundcherry
<i>Sonchus oleraceus</i> L.	common sowthistle
<i>Tradescantia ohiensis</i> Raf.	bluejacket
<i>Xyris caroliniana</i> Walter	Carolina yellow eyed grass
<i>Zigadenus nuttallii</i> (A. Gray) S. Watson	Nuttall's deathcamas

Woody Plants

<i>Amorpha canescens</i> Pursh	leadplant
<i>Cornus drummondii</i> C.A. Mey.	roughleaf dogwood
<i>Mimosa nuttallii</i> (DC. ex Britton & Rose) B.L. Turner	Nuttall's sensitive-briar
<i>Quercus macrocarpa</i> Michx.	bur oak
<i>Symphoricarpos orbiculatus</i> Moench	coralberry

Inventory 4 - The Anderson Ranch, Rogers County, OK (May 10 and May 11)

Any disappointment experienced at the Nature Conservancy's Tallgrass Prairie Preserve was erased immediately upon arrival at the home of Dave and Patsy Anderson, in Rogers County. We were all welcomed into their lovely home at the peak of a tornado watch. Fortunately the tornados missed us and we enjoyed a wonderful evening in anticipation of a major trek over the Anderson estate the next morning.

The Andersons are located in MLRA Cherokee Prairies. The western part of this area supports tall grass prairie vegetation. Big bluestem, little bluestem, indiangrass, and switchgrass are the dominant species. The eastern part and the valleys in the western part support natural vegetation characterized by trees. Red oak, white oak, and shagbark hickory are major species. Islands of tall grass prairie vegetation are common. Farming has replaced the native grasses but the trees are still around.

Grasses

<i>Aristida oligantha</i> Michx.	prairie threeawn
<i>Bromus catharticus</i> Vahl	rescuegrass
<i>Bromus tectorum</i> L.	cheatgrass
<i>Cynodon dactylon</i> (L.) Pers.	Bermudagrass
<i>Dichanthelium</i> sp. (Hitchc. & Chase) Gould	rosette grass
<i>Hordeum pusillum</i> Nutt.	little barley
<i>Poa pratensis</i> L.	Kentucky bluegrass
<i>Schedonorus pratensis</i> (Huds.) P. Beauv.	meadow fescue
<i>Tridens flavus</i> (L.) Hitchc.	purpletop tridens
<i>Vulpia octoflora</i> (Walter) Rydb. var. <i>octoflora</i>	sixweeks fescue



World's largest totem pole



Patsy Anderson in her new, old kitchen



Dave Anderson (front left)

Rogers county, named for Will, is also famous for another



item, the worlds largest totem pole, of which Dave is current overseer. It's one item that will help when you "Get your kicks on route sixty-six".

THE WORLD'S LARGEST TOTEM POLE	
Built By Ed Galloway 1937-1948	
Dimensions:	90' tall, 18' in diameter, 54' base
Structure:	Made from 100 tons of sand and rock, 28 tons of cement, 6 tons of steel
Markings:	200 different carved pictures with four, nine foot Indian chiefs near the top.

Our inventory was followed by the most sumptuous breakfast, and we departed late morning hoping Jack had arranged similar stops. But before departing, one team member ask Dave if he could measure and cut him a board on which to set in the vehicle. This historic moment was recorded by our ace photographer.



Dave's favorite plant
Lespedeza cuneata, sericea lespedeza



Forbs

<i>Achillea millefolium</i> L.	common yarrow
<i>Asclepias viridis</i> Walter	green antelopehorn
<i>Calylophus serrulatus</i> (Nutt.) P.H. Raven	yellow sundrops
<i>Cerastium fontanum</i> Baumg	mouse-ear chickweed
<i>Comandra umbellata</i> (L.) Nutt.	bastard toadflax
<i>Commelina dianthifolia</i> Delile	birdbill dayflower
<i>Dalea purpurea</i> Vent.	purple prairie clover
<i>Daucus carota</i> L.	Queen Anne's lace
<i>Lepidium virginicum</i> L.	Virginia pepperweed
<i>Lespedeza cuneata</i> (Dum. Cours.) G. Don	sericea lespedeza
<i>Leucanthemum vulgare</i> Lam.	oxeye daisy
<i>Oxalis corniculata</i> L.	creeping woodsorrel
<i>Penstemon</i> sp. Schmidel	Penstemon
<i>Polygonum</i> sp. L	knotweed
<i>Potentilla gracilis</i> Douglas ex Hook.	slender cinquefoil
<i>Rubus riograndis</i> L.H. Bailey	Rio Grande dewberry
<i>Rumex crispus</i> L.	curly dock
<i>Trifolium grandiflorum</i> Schreb.	large-flower hop clover
<i>Trifolium vesiculosum</i> Savi	arrowleaf clover
<i>Vernonia arkansana</i> DC.	Arkansas ironweed
<i>Vicia sativa</i> L.	garden vetch

Woody Plants

<i>Catalpa bignonioides</i> Walter	southern catalpa
<i>Celtis laevigata</i> Willd.	sugarberry
<i>Lonicera japonica</i> Thunb.	Japanese honeysuckle
<i>Quercus rubra</i> L.	northern red oak

Quercus stellata Wangenh.
Rosa multiflora Thunb.
Smilax rotundifolia L.
Symphoricarpos orbiculatus Moench
Vitis sp. L.

post oak
multiflora rose
roundleaf greenbriar
coralberry
grape

Inventory 5 - En Route between stop 4 and 6. (May 11)

A late start and many miles required skipping the scheduled Pontotoc Ridge Preserve, Johnston County, OK. However, the weather was great and the potential for picture taking overwhelmed Wendall, and a quick inventory stop by PB's Holzworth and Gaffney followed. The scribe was instructed to start writing. This en route inventory was a substitute for the Pontotoc Ridge Preserve.

Grasses

Lolium perenne L.
Lolium perenne L. ssp. *multiflorum* (Lam.) Husnot

perennial ryegrass
Italian ryegrass

Forbs

Castilleja spp. Mutis ex L. f.
Lathyrus latifolius L.
Polytaenia nuttallii DC.
Tradescantia occidentalis (Britton) Smyth
Triodanis leptocarpa (Nutt.) Nieuwl.

Indian paintbrush
perennial pea
Nuttall's prairie parsley
prairie spiderwort
slimpod Venus' looking-glass



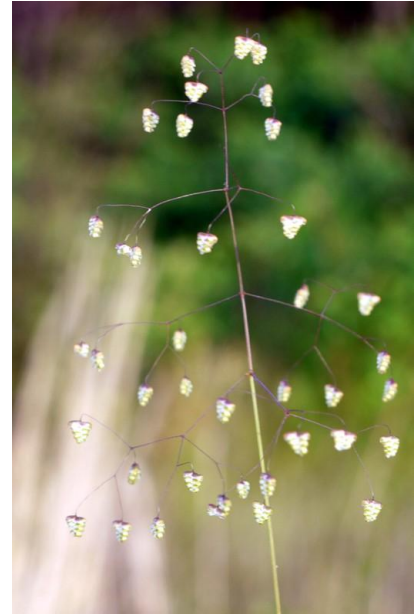
Castilleja spp., Indian paintbrush



Tradescantia occidentalis, prairie spiderwort

Inventory 6 - Caddo National Grasslands, Fannin County, TX (May 11)

Caddo National Grassland consists of two separate sections located in northeastern and southeastern Fannin County, Texas. It is a 17,873-acre park that was purchased in the 1930s. The goal of the park when purchased was to restore the eroded soil. The grassland is administered together with all four U. S. National Forests and two National Grasslands located entirely in Texas. Arriving at the Grassland about an hour before dark allowed us a slow trot inventory of less than an acre. Vegetation was dense, including an expanding tree population, as shown below left.



Briza minor, little quakinggrass



The Caddo Grasslands is located in MLRA East Cross Fingers, supporting oak savanna vegetation with a tall grass under story. Our selected inventory site was somewhat representative of this, but infested with many exotics.

After a late supper and a later leveraging of one motel price against another, our lodging designee Wendall located the least expensive one and we retired in Decatur, TX from a long but productive day.

Grasses

Agrostis hyemalis (Walter) Britton, Sterns & Poggenb.

Andropogon spp. L.

Andropogon virginicus L.

winter bentgrass

bluestem

broomsedge bluestem

Briza minor L.
Bromus catharticus Vahl
Dichanthelium spp. (Hitchc. & Chase) Gould
Lolium perenne L.
Lolium perenne L. ssp. *multiflorum* (Lam.) Husnot
Phalaris caroliniana Walter
Setaria spp. P. Beauv.

little quakinggrass
 rescuegrass
 rosette grass
 perennial ryegrass
 Italian ryegrass
 Carolina canarygrass
 bristlegrass

Forbs

Bulbostylis capillaris (L.) Kunth ex C.B. Clarke
Carex spp. L.
Castilleja foliolosa Hook. & Arn.
Cerastium fontanum Baumg.
Echinacea spp. Moench
Eleocharis spp. R. Br.
Equisetum spp. L.
Erigeron bellidiastrum Nutt.
Erodium cicutarium (L.) L'Hér. ex Aiton
Galium circaezans Michx.
Helianthus hirsutus Raf
Juncus sp. L.
Kummerowia stipulacea (Maxim.) Makino
Oxalis corniculata L.
Oxalis stricta L.
Plantago spp. L.
Prunella vulgaris L.
Rudbeckia hirta L.
Rumex spp. L.
Sisyrinchium campestre E.P. Bicknell
Trifolium grandiflorum Schreb.

Triodanis perfoliata (L.) Nieuwl.
Vicia sativa L.

densetuft hairsedge
 sedge
 Texas Indian paintbrush
 mouse-ear chickweed
 purple coneflower
 spikerush
 horsetail
 western daisy fleabane
 redstem stork's bill
 licorice bedstraw
 hairy sunflower
 Rush
 Korean clover
 creeping woodsorrel
 common yellow woodsorrel
 plantain
 common selfheal
 blackeyed Susan
 dock
 prairie blue-eyed grass
 large-flower hop clover
 clasping Venus' looking-glass
 garden vetch

Woody Plants

Lonicera japonica Thunb.
Prunus angustifolia Marsh.
Rhus copallinum L.
Rubus aboriginum Rydb.
Rubus allegheniensis Porter
Lonicera japonica Thunb.
Prunus angustifolia Marsh.

Japanese honeysuckle
 Chickasaw plum
 winged sumac
 garden dewberry
 Allegheny blackberry
 Japanese honeysuckle
 Chickasaw plum

Rhus copallinum L.
Rubus aboriginum Rydb.
Rubus allegheniensis Porter

winged sumac
garden dewberry
Allegheny blackberry

Inventory 7 - U.S. Forest Service LBJ National Grasslands, Wise County, TX (May 12)

The LBJ National Grasslands are the only urban national grasslands and extends over 20,000+ acres in Wise County, just north of the city of Decatur. From the standpoint of vegetation this was a beautiful site. Besides, the site was close to our nights lodging, the sun was shining, and the wildflowers were in volumes, and overwhelming.



This site is in the north end of MLRA Grand Prairie. The PNV is prairie vegetation with widely scattered live oak and other trees. Little bluestem, sideoats grama, tall grama, and scattered shrub live oak and juniper trees characterize the natural vegetation on the very shallow soils and along escarpments.



Penstemon cobaea, cobaea beardtongue



Linum rigidum, stiffstem flax



Frequently seen, Mimosa asperata, sensitive-briar

Grasses

Aegilops cylindrica Host

jointed goatgrass

Avena fatua L.

wild oat

Bouteloua curtipendula (Michx.) Torr.

sideoats grama

Bouteloua gracilis (Willd. ex Kunth) Lag. ex Griffiths

blue grama

Cynodon dactylon (L.) Pers.

Bermudagrass

Lolium perenne L.

perennial ryegrass

Nasella leucotricha (Trin. & Rupr.) Pohl

Texas wintergrass

Panicum spp. L.

panicgrass

Poa annua L.

annual bluegrass

Sporobolus sp. R. Br.

dropseed

Forbs

Allium spp. L.

onion

Astragalus crassicaarpus Nutt.

groundplum milkvetch

Bidens cernua L.

nodding beggartick

Callirhoe involucrata (Torr. & A. Gray) A. Gray

purple poppymallow

Calylophus berlandieri Spach

Berlandier's sundrops

Carex sp. L.

sedge

Castilleja indivisa Engelm.

entireleaf Indian paintbrush

Cirsium undulatum (Nutt.) Spreng.

wavyleaf thistle

<i>Cnidoscolus texanus</i> (Müll. Arg.) Small	Texas bullnettle
<i>Dalea purpurea</i> Vent.	purple prairie clover
<i>Echinacea angustifolia</i> DC.	blacksamson echinacea
<i>Echinacea pallida</i> (Nutt.) Nutt.	pale purple coneflower
<i>Erigeron philadelphicus</i> L.	Philadelphia fleabane
<i>Gaillardia pulchella</i> Fouq.	blanketflower
<i>Gaura coccinea</i> Nutt. ex Pursh	scarlet beeblossom
<i>Hymenopappus artemisiifolius</i> DC.	oldplainsman
<i>Liatris</i> sp. Gaertn. ex Schreb.	blazing star
<i>Linum berlandieri</i> Hook. var. <i>berlandieri</i>	Berlandier's yellow flax
<i>Linum rigidum</i> Pursh	stiffstem flax
<i>Marshallia caespitosa</i> Nutt. ex DC.	puffballs
<i>Oenothera macrocarpa</i> Nutt. ssp. <i>macrocarpa</i>	bigfruit evening primrose
<i>Oenothera speciosa</i> Nutt.	pinkladies
<i>Oenothera</i> spp. L.	primrose
<i>Opuntia engelmannii</i> Salm-Dyck ex Engelm.	cactus apple
<i>Pediomelum cuspidatum</i> (Pursh) Rydb.	largebract Indian breadroot
<i>Penstemon cobaea</i> Nutt.	cobaea beardtongue
<i>Plantago ovata</i> Forssk.	desert Indianwheat
<i>Plantago virginica</i> L.	Virginia plantain
<i>Polygala alba</i> Nutt.	Nuttall's prairie parsley
<i>Pyrrhopappus pauciflorus</i> (D. Don) DC.	smallflower desert-chicory
<i>Scutellaria resinosa</i> Torr.	sticky skullcap
<i>Solanum elaeagnifolium</i> Cav.	silverleaf nightshade
<i>Tridens albescens</i> (Vasey) Woot. & Standl.	white tridens
<i>Verbena hastata</i> L.	herb of the cross
<i>Yucca glauca</i> Nutt.	soapweed yucca
<i>Yucca recurvifolia</i> Salisb.	curved-leaf yucca

Woody Plants

<i>Celtis laevigata</i> Willd.	sugarberry
<i>Cornus drummondii</i> C.A. Mey.	roughleaf dogwood
<i>Juniperus ashei</i> J. Buchholz	Ashe's juniper
<i>Mimosa microphylla</i> Dryand.	littleleaf sensitive-briar
<i>Prunus angustifolia</i> Marsh.	Chickasaw plum
<i>Quercus rubra</i> L.	red oak
<i>Quercus stellata</i> Wangenh.	post oak
<i>Symphoricarpos orbiculatus</i> Moench	coralberry



One last shot

Inventory 8 - Simpson Prairie, Native Prairies Association of Texas (May 12)

The Native Prairies Association of Texas (NPAT) is a non-profit membership organization and land trust dedicated to the conservation, restoration, and appreciation of native prairies, savannas, and other grasslands in Texas and throughout the United States. NPAT protects over 1200 acres of native Texas prairie, including over 100 acres of endangered/threatened tallgrass prairie. Another former NRCS plant materials person, Arnold Davis, was instrumental in establishing the Association following his retirement.

Simpson Prairie is located in McLennan County a prairie remnant of the Grand Prairie on a gently sloping hillside. Little bluestem, indiagrass, and big bluestem are the dominant grasses. It is owned by Mike and Marliiss Williams with a conservation easement held by NPAT. After growing up in the area and learning about prairies, Mike remembered seeing prairie before the area of Simpson Prairie became overgrazed. He then searched for and found part of the overgrazed prairie, purchased it, and restored Simpson Prairie. Mike has used seed hay from Simpson Prairie in area prairie restoration and plantings.



Simpson Prairie

A Tallgrass Prairie remnant of the Grand Prairie / Lampasas Cut Plains

Tallgrass prairie once covered millions of acres of Texas, but less than 1% of the endangered tallgrass prairie experienced by early Texans now remains.

Protected in perpetuity for future generations by
Mike & Marliiss Williams

Via a conservation easement held by the
Native Prairies Association of Texas

<http://www.texasprairie.org/>

Grasses

<i>Aegilops cylindrica</i> Host	jointed goatgrass
<i>Andropogon gerardii</i> Vitman	big bluestem
<i>Bouteloua hirsuta</i> Lag.	hairy grama
<i>Schizachyrium scoparium</i> (Michx.) Nash	little bluestem

Forbs

<i>Argemone albiflora</i> Hornem.	bluestem pricklypoppy
<i>Asclepias asperula</i> (Decne.) Woodson	spider milkweed
<i>Asclepias</i> spp. L.	milkweed
<i>Asclepias viridis</i> Walter	green antelopehorn
<i>Bidens cernua</i> L.	nodding beggartick
<i>Callirhoe involucrata</i> (Torr. & A. Gray) A. Gray	purple poppymallow
<i>Carex</i> spp. L.	carex
<i>Cirsium undulatum</i> (Nutt.) Spreng.	wavyleaf thistle
<i>Galium</i> spp. L.	bedstraw
<i>Gaura coccinea</i> Nutt. ex Pursh	scarlet beeblossom
<i>Hymenopappus artemisiifolius</i> DC.	oldplainsman
<i>Linum rigidum</i> Pursh	stiffstem flax
<i>Marshallia caespitosa</i> Nutt. ex DC.	puffballs
<i>Oenothera macrocarpa</i> Nutt. ssp. <i>macrocarpa</i>	bigfruit evening primrose
<i>Plantago ovata</i> Forssk.	desert Indianwheat
<i>Scutellaria resinosa</i> Torr.	sticky skullcap
<i>Vicia sativa</i> L.	garden vetch

Woody Plants

<i>Prunus angustifolia</i> Marsh.	Chickasaw plum
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Postscript to Inventory 8. After leaving the site we headed for Waco for lodging. On the way to town Larry suggested we find some barbeque for dinner. Great idea. So Wendall consulted his iPad and found several in Waco. With GPS in hand we toured the city to no avail, finely settling for an excellent dining establishment, but no BBQ. To be continued.



Left: Gaura coccinea, scarlet beeblossom

Below: Andropogon gerardii, big bluestem



Marshallia caespitosa, puffballs



Fences make no difference to wildflowers

Inventory 9 - Lehmann Prairie, Native Prairies Association of Texas. (May 13)

Prior to our arrival in Texas organizer Carlson had identified this site and that a former NRCS plant materials person James Alderson was heading up the Native Prairies Association of Texas. He joined us at the Lehmann site. James is a man in his element. He knew every plant, a history about most and was the picture of a person in the right job. It was great seeing him, and he seemed to enjoy his former colleagues, staying with us until we departed the Granger site.

Lehmann Prairie is a tallgrass prairie remnant of the Blackland Prairie. The Texas Blackland Prairie is part of the endangered tallgrass prairies of North America, of which less than 1% remains due to conversion to agriculture and development. Little bluestem and indiangrass are dominant grasses. Gilgai, natural depressions in the prairie, harbor different native plant species and increase biodiversity.



It is owned by Corrine (Lehmann) Dragoo with a conservation easement held by NPAT. Corrine's family protected the area for several generations by using it only for hay. Then Corrine established the permanent protection for future generation via the conservation easement with NPAT. From the point of view of being on a native prairie, this came the closest of any site on the entire trek.

Centaurea Americana, American star-thistle



Doesn't anyone know what it is?



Grasses

Aegilops cylindrica Host

Avena fatua L.

Bromus arvensis L.

Bromus catharticus Vahl

Elymus canadensis L.

Hordeum pusillum Nutt.

Lolium perenne L. ssp. *multiflorum* (Lam.) Husnot

Nasella Leucotricha (Trin. & Rupr.) Pohl

Panicum spp. L.

Paspalum dilatatum Poir.

Paspalum notatum Flueggé

Phalaris caroliniana Walter

Schedonnardus paniculatus (Nutt.) Trel.

Schizachyrium scoparium (Michx.) Nash

Setaria spp. P. Beauv

Sorghastrum nutans (L.) Nash

Sorghum halepense (L.) Pers.

Sporobolus sp. R. Br.

jointed goatgrass

wild oat

field brome

rescuegrass

Canada wildrye

little barley

Italian ryegrass

Texas wintergrass

panicum sp.

dallisgrass

bahiagrass

Carolina canarygrass

tumblegrass

little bluestem

bristlegrass

Indiangrass

johnsongrass

dropseed



James Alderson, in his element



Delphinium virescens, plains larkspur



Oenothera speciosa, showy evening primrose

Forbs

<i>Asclepias asperula</i> (Decne.) Woodson ssp. <i>capricornu</i> (Woodson) Woodson	antelopehorns
<i>Asclepias speciosa</i> Torr.	showy milkweed
<i>Callirhoe digitata</i> Nutt.	winecup
<i>Carex</i> spp. L.	sedge
<i>Castilleja foliolosa</i> Hook. & Arn.	Texas Indian paintbrush
<i>Centaurea americana</i> Nutt.	American star-thistle
<i>Cirsium texanum</i> Buckley	Texas thistle
<i>Delphinium virescens</i> Nutt.	plains larkspur
<i>Eleocharis</i> spp. R. Br.	spikerush
<i>Engelmannia peristenia</i> (Raf.) Goodman & C.A. Lawson	Engelmann's daisy
<i>Erigeron bellidiastrum</i> Nutt.	western daisy fleabane
<i>Gaillardia pulchella</i> Foug.	firewheel
<i>Hymenopappus artemisiifolius</i> DC.	oldplainsman
<i>Juncus</i> spp. L.	rush
<i>Krameria lanceolata</i> Torr.	trailing krameria
<i>Liatris</i> spp. Gaertn. ex Schreb.	blazing star
<i>Lindheimera texana</i> A. Gray & Engelm.	Texas yellowstar
<i>Linum rigidum</i> Pursh	stiffstem flax
<i>Lupinus texensis</i> Hook.	Texas lupine
<i>Monarda punctata</i> L.	spotted beebalm
<i>Neptunia lutea</i> (Leavenworth) Benth.	yellow puff
<i>Oenothera speciosa</i> Nutt.	showy evening primrose
<i>Plantago ovata</i> Forssk.	desert Indianwheat
<i>Plantago</i> spp. L.	plantain
<i>Pyrrhopappus pauciflorus</i> (D. Don) DC.	smallflower desert-chicory

<i>Ratibida pinnata</i> (Vent.) Barnhart	pinnate prairie coneflower
<i>Rhexia</i> sp. L.	meadowbeauty
<i>Ruellia nudiflora</i> (Engelm. & A. Gray) Urb.	violet wild petunia
<i>Rumex crispus</i> L.	curly dock
<i>Sabatia campestris</i> Nutt.	Texas star
<i>Sideroxylon lanuginosum</i> Michx.	gum bully
<i>Stenaria nigricans</i> (Lam.) Terrell var. <i>nigricans</i>	diamondflowers
<i>Symphotrichum</i> sp. L.	heath aster
<i>Teucrium</i> sp. L.	germander
<i>Tradescantia occidentalis</i> (Britton) Smyth	prairie spiderwort
<i>Valerianella</i> sp. Mill.	cornsalad
<i>Verbena halei</i> Small	Texas vervain
<i>Verbena officinalis</i> L.	herb of the cross
<i>Vicia sativa</i> L.	garden vetch

Woody Plants

<i>Acacia</i> spp. Mill.	acacia
<i>Celtis laevigata</i> Willd.	sugarberry
<i>Mimosa microphylla</i> Dryand.	littleleaf sensitive-briar
<i>Prosopis</i> spp. L.	mesquite

Inventory 10 - Granger Wildlife Management Area, managed by US Army Corps of Engineers. (May 13)

The Granger WMA has 10,888 acres located in Williamson County about 50 miles north of Austin. This area in east central Texas is part of the Blackland Prairies Ecological Region. The area we inventoried was immediately below the dam of the Granger Lake, and contains, along with many volunteers, repository plantings of several native grasses and forbs.



Ratibida columnifera, upright prairie coneflower



Top: James' organization

Left: *Tripsacum dactyloides*, eastern gamagrass

Grasses

<i>Bothriochloa ischaemum</i> (L.) Keng var. <i>songarica</i> (Rupr. ex Fisch. & C.A. Mey.) Celarier & Harlan	yellow bluestem
<i>Panicum antidotale</i> Retz.	blue panicum
<i>Sorghum halepense</i> (L.) Pers.	johnsongrass
<i>Tripsacum dactyloides</i> (L.) L.	eastern gamagrass
<i>Vulpia octoflora</i> (Walter) Rydb. var. <i>octoflora</i>	sixweeks fescue

Forbs

<i>Ambrosia trifida</i> L.	great ragweed
<i>Amphiachyris dracunculoides</i> (DC.) Nutt.	prairie broomweed
<i>Anemone berlandieri</i> Pritz.	tenpetal thimbleweed
<i>Desmanthus</i> sp. Willd.	bundleflower
<i>Gaillardia pulchella</i> Foug.	firewheel
<i>Gaura coccinea</i> Nutt. ex Pursh	scarlet beeblossom
<i>Helianthus maximiliani</i> Schrad.	Maximilian sunflower
<i>Lathyrus latifolius</i> L.	perennial pea
<i>Medicago polymorpha</i> L.	burclover
<i>Opuntia phaeacantha</i> Engelm.	tulip pricklypear
<i>Polytaenia nuttallii</i> DC.	Nuttall's prairie parsley
<i>Ratibida columnifera</i> (Nutt.) Woot. & Standl.	upright prairie coneflower
<i>Rubus aboriginum</i> Rydb.	garden dewberry
<i>Solidago</i> spp. L.	goldenrod

Inventory 11 - En Route between stop 10 and 12. (May 13 and 14)



After leaving the Granger site we drove through seas of Texas wildflowers to the beautiful town of Fredericksburg, TX. This inventory took place en route from site 10 toward the Hill Country to State Natural Area, Bandera TX (Site 11). Part of the inventory came from the afternoon drive on May 13 and the drive from Fredericksburg to the Natural Area and back to the town of Bandera on the morning of May 14. The route to Fredericksburg was the most beautiful of the Trek.

Upon arriving in Fredericksburg, Wendall did his magic again and we settled in to a more than adequate lodging at a reasonable price. The search for BBQ was fruitless and we closed another local eatery.

One photographer was overwhelmed with rear ends of his fellow trekkers, to the point of carrying dried dodo in his pocket, waiting for the perfect opportunity.



On May 14 we headed to the Hill Country State Natural Area, which is a scenic mosaic of rocky hills, flowing springs, oak groves, grasslands, and canyons. The terrain ranges from flat, broad creek bottoms to steep, rocky canyons up to 2000 feet in elevation. The Nature Area was intended to be an inventory site but due to heavy rains it was closed. Part of this inventory came from intermittent stops along the road for a brief inventory

A typical site we had to endure as we drove through the Hill Country.



Melampodium leucanthum, plains blackfoot



Monarda punctata, lemon beebalm

Grasses

Cynodon dactylon (L.) Pers.

Elymus virginicus L.

Lolium perenne L. ssp. *multiflorum* (Lam.) Husnot

Nassella leucotricha (Trin. & Rupr.) Pohl

Schizachyrium scoparium (Michx.) Nash

Solanum elaeagnifolium Cav.

Sorghum halepense (L.) Pers.

Vulpia octoflora (Walter) Rydb. var. *octoflora*

Bermudagrass

Virginia wildrye

Italian ryegrass

Texas wintergrass

little bluestem

silverleaf nightshade

johnsongrass

sixweeks fescue

Forbs

Allium drummondii Regel

Callirhoe digitata Nutt.

Cirsium undulatum (Nutt.) Spreng.

Engelmannia peristenia (Raf.) Goodman & C.A. Lawson

Erodium texanum A. Gray

Gaillardia amblyodon J. Gay

Gaura coccinea Nutt. ex Pursh

Ipomopsis aggregata (Pursh) V.E. Grant

Lepidium virginicum L.

Lygodesmia texana (Torr. & A. Gray) Greene

Mahonia trifoliolata (Moric.) Fedde

Melampodium leucanthum Torr. & A. Gray

Monarda punctata L.

Plantago ovata Forssk.

Polygala alba Nutt.

Ratibida columnifera (Nutt.) Woot. & Standl.

Ratibida sp. Raf.

Drummond's onion

winecup

wavyleaf thistle

Engelmann's daisy

Texas stork's bill

maroon blanketflower

scarlet beeblossom

scarlet gilia

Virginia pepperweed

Texas skeletonplant

algerita

plains blackfoot

spotted beebalm

desert Indianwheat

Nuttall's prairie parsley

upright prairie coneflower

coneflower

Rudbeckia hirta L.
Salvia azurea Michx. ex Lam.

blackeyed Susan
azure blue sage

Woody Plants

Juniperus ashei J. Buchholz
Tillandsia recurvata (L.) L.
Vitis sp. L.

Ashe's juniper
small ballmoss
grape

Postscript to the inventory from the Granger site to Bandera, TX. Heavy rain welcomed us as we went through Bandera at about 8:30AM, but we saw a sign that warmed the gastric juices in Larry's tummy; 'Barbeque'. We drove to the Natural Area and found it closed. Our roadside inventory took awhile, but by 10:30 we were back in Bandera. As R.E. Lee said at Gettysburg, against the advice of his generals, "They are here and we are here, so we will fight". The Barbeque is here and so are we. Lee made a mistake but we didn't.

As we enjoyed our brunch our discussion of wildflowers included the lady who served us. Crested Butte, CO was mentioned, which she had visited. "They got variety but we got volume" was her comparison of Bandera and Crested Butte. We could all certainly agree; Texas has wildflower volume.

Inventory 12 - Kerr Wildlife Management Area Texas Parks and Wildlife Department (May 14)

Having finished lunch we then headed to the Kerr Wildlife Management Area, located at the



headwaters of the North Fork of the Guadalupe River. The Area contains 6,493 acres, representative of the Edwards Plateau habitat type of Texas. The Area was purchased in fee title by the State of Texas (Game, Fish and Oyster Commission) in 1950 from the Presbyterian MO Ranch Assembly under the Pittman-Robertson Act using Federal Aid in Wildlife Restoration.

The Management Area is also in the Texas Hill Country. It is maintained as a grassland savannah

largely by grazing habits of bison and antelope as well as by frequent natural and man-made fires. The land now supports a rich diversity of forbs and grasses. Its history, however, is all too typical.



Coreopsis sp., tickweed

By 1900, continuous overgrazing and control of fire had taken its toll. The land began to change from grassland to a brushland. Many of the woody brush species were readily grazed by sheep, goats, cattle, and an increasing deer herd. These animals have selective eating habits and eat the more desirable plants first and leave the less desirable plants for last. By the 1940's, many of the good quality plant species were highly depleted and not readily found on most ranges. The Hill Country is now dominated by poor quality browse, forb, and grass plants. The juniper (commonly called cedar) is a highly undesirable forage plant avoided by both domestic livestock and deer. In much of the Hill Country, cedar became the dominant plant species causing a once diverse and healthy landscape to become a "cedar brake" with very little plant diversity or vigor. Its recovery since 1950 is encouraging.



Left: Opuntia engelmannii , cactus apple

Below: Asclepias asperula, spider milkweed



Grasses

<i>Andropogon virginicus</i> L.	broomsedge bluestem
<i>Bouteloua curtipendula</i> (Michx.) Torr.	sideoats grama
<i>Bouteloua dactyloides</i> (Nutt.) J.T. Columbus	buffalograss
<i>Bouteloua hirsuta</i> Lag. var. <i>pectinata</i> (Featherly) Cory	tall grama
<i>Nassella leucotricha</i> (Trin. & Rupr.) Pohl	Texas wintergrass
<i>Lolium perenne</i> L. ssp. <i>multiflorum</i> (Lam.) Husnot	Italian ryegrass
<i>Tripsacum dactyloides</i> (L.) L.	eastern gamagrass

Forbs

<i>Asclepias asperula</i> (Decne.) Woodson	spider milkweed
<i>Centaurea solstitialis</i> L.	yellow star thistle
<i>Centaureum beyrichii</i> (Torr. & A. Gray ex Torr.) B.L. Rob.	quinineweed
<i>Cirsium undulatum</i> (Nutt.) Spreng.	wavyleaf thistle
<i>Convolvulus arvensis</i> L.	field bindweed
<i>Coreopsis douglasii</i> (DC.) H.M. Hall	Douglas' tickseed
<i>Coreopsis tinctoria</i> Nutt.	golden tickseed
<i>Cucurbita pepo</i> L. var. <i>texana</i> (Scheele) D. Decker	Texas gourd
<i>Cuscuta</i> sp. L.	Dodder
<i>Cylindropuntia leptocaulis</i> (DC.) F.M. Knuth	Christmas cactus
<i>Daucus carota</i> L.	Queen Anne's lace
<i>Erigeron bellidiastrum</i> Nutt.	western daisy fleabane
<i>Gaura coccinea</i> Nutt. ex Pursh	scarlet beeblossom
<i>Glandularia canadensis</i> (L.) Nutt.	rose mock vervain
<i>Lespedeza</i> sp. Michx.	Lespedeza
<i>Linum sulcatum</i> Riddell	grooved flax
<i>Lupinus subcarnosus</i> Hook.	Texas bluebonnet
<i>Medicago polymorpha</i> L.	Burclover
<i>Opuntia engelmannii</i> Salm-Dyck ex Engelm.	cactus apple
<i>Plantago ovata</i> Forssk.	desert Indianwheat
<i>Plantago virginica</i> L.	Virginia plantain
<i>Salvia azurea</i> Michx. ex Lam.	azure blue sage
<i>Sedum nuttallianum</i> Raf.	yellow stonecrop
<i>Senna roemeriana</i> (Scheele) Irwin & Barneby	twoleaf senna
<i>Solanum xanti</i> A. Gray	chaparral nightshade
<i>Tetragonotheca texana</i> Engelm. & A. Gray ex A. Gray	squarebud daisy
<i>Tetraeneuris scaposa</i> (DC.) Greene	stemmy four-nerve daisy
<i>Tragopogon dubius</i> Scop.	yellow salsify
<i>Tridens flavus</i> (L.) Hitchc.	purpletop tridens
<i>Verbascum thapsus</i> L.	common mullein

Woody Plants

Juniperus ashei J. Buchholz

Ashe's juniper

Prosopis sp. L.

Mesquite

Inventory 13 - En Route between Kerr WMA to the James B. (Bud) Smith PMC (May 15)

This en route inventory include the evening of May 14 on our way to Abilene, TX, and from there to the Knox City PMC the next morning. Heavy rains had fallen overnight, which was not a good omen for a tour of the PMC

Grasses

Avena fatua L.

wild oat

Bothriochloa ischaemum (L.) Keng var. *songarica* (Rupr. ex Fisch. & C.A. Mey.) Celarier & Harlan

yellow bluestem

Bothriochloa sp. Kuntze

Beardgrass

Bouteloua curtipendula (Michx.) Torr.

sideoats grama

Bromus arvensis L.

field brome

Dimorphocarpa wislizeni (Engelm.) Rollins

Touristplant

Hordeum pusillum Nutt.

little barley

Forbs

Argemone albiflora Hornem.

Argemone albiflora Hornem.

Callirhoe digitata Nutt.

Winecup

Erigeron bellidiastrum Nutt.

western daisy fleabane

Erodium texanum A. Gray

Texas stork's bill

Gaura coccinea Nutt. ex Pursh

scarlet beeblossom

Lepidium densiflora Schrad.

common pepperwort

Melilotus officinalis (L.) Lam.

yellow sweetclover

Oenothera triloba Nutt.

stemless evening primrose

Opuntia engelmannii Salm-Dyck ex Engelm.

cactus apple

Plantago helleri Small

Heller's plantain

Tillandsia recurvata (L.) L.

small ballmoss

Tragopogon dubius Scop.

yellow salsify

Verbena halei Small

Texas vervain

Yucca constricta Buckley

Buckley's yucca



Left: Hordeum pusillum, little barley



Below: Melilotus officinalis, yellow sweetclover

James B. (Bud) Smith PMC (May 15)

We arrived at the PMC Saturday morning about 9:30AM. Manager Gary Rea was contributing his Saturday morning to show us around. Unfortunately, the rain confined our tour to the office, greenhouse and buildings. After a couple hours visit we departed for Wichita Mountains Wildlife Refuge. We did indeed enjoy our brief stay and really appreciate Gary sacrificing his Saturday to be with us.



Gary discussing the PMC program with Larry and Bob.

Inventory 14 - Wichita Mountains Wildlife Refuge, US Fish and Wildlife Service, USDI (May 15)



The refuge lies at the vegetational crossroads of the plains country. Here are found excellent examples of the mixed prairie grasslands -- buffalo and grama grasses typical of the western short-grass prairies as well as the bluestems, Indian grass, and switch grass more typical of the eastern tall-grass areas. The oak timberlands are typical of the "cross timbers" -- fingers of black jack and post oaks which penetrate the Oklahoma grasslands from the east. Along streams are found other woody species typical of this portion of Oklahoma, such as walnut, pecan, ash, elm, hackberry and cottonwood.

Species more typical of other climates are also found. Maples are present and are related either to the Eastern sugar maple or the Big-toothed maple of the Rockies. A small grove of live oak, typical of more southern sections of the country represents the most northern extension of this species in the plains country.



Could have been taken 1857 by John C. Fremont, the Pathfinder.

Grasses

Aristida oligantha Michx.

Bouteloua dactyloides (Nutt.) J.T. Columbus

Bromus tectorum L.

Cynodon dactylon (L.) Pers.

Dichanthelium sp. (Hitchc. & Chase) Gould

prairie threeawn

buffalograss

cheatgrass

Bermudagrass

rosette grass

Elymus canadensis L.
Hordeum pusillum Nutt.
Sorghastrum nutans (L.) Nash
Sporobolus sp. R. Br.

Canada wildrye
little barley
Indiangrass
dropseed

Forbs

Achillea millefolium L. var. *occidentalis* DC.
Allium drummondii Regel
Ambrosia psilostachya DC.
Apocynum androsaemifolium L.
Asclepias asperula (Decne.) Woodson ssp. *capricornu* (Woodson) Woodson
Astragalus sp. L.
Baptisia australis (L.) R. Br. var. *minor* (Lehm.) Fernald
Carex spp. L.
Castilleja sp. Mutis ex L. f.
Cirsium undulatum (Nutt.) Spreng.
Coreopsis sp. L.
Cuscuta sp. L.
Echinacea spp. Moench
Erigeron bellidiastrum Nutt.
Euphorbia corollata L.
Gaillardia sp. Foug.
Grindelia squarrosa (Pursh) Dunal
Helianthus maximiliani Schrad.
Lepidium virginicum L.
Lespedeza cuneata (Dum. Cours.) G. Don
Lesquerella sp. S. Watson
Liatris aspera Michx.
Linum rigidum Pursh
Medicago polymorpha L.
Mimosa microphylla Dryand.
Oenothera macrocarpa Nutt. ssp. *macrocarpa*
Opuntia sp. Mill.
Pediomelum spp. Rydb.
Penstemon albidus Nutt.
Polygonum sp. L.
Rudbeckia hirta L.
Rumex sp. L.
Salvia azurea Michx ex Lam.
Scutellaria resinosa Torr.

western yarrow
Drummond's onion
Cuman ragweed
spreading dogbane
antelopehorns
milkvetch
blue wild indigo
carex
Indian paintbrush
wavyleaf thistle
tickseed
dodder
purple coneflower
western daisy fleabane
flowering spurge
blanketflower
curlycup gumweed
Maximilian sunflower
Virginia pepperweed
sericea lespedeza
bladderpod
tall blazing star
stiffstem flax
burclover
littleleaf sensitive-briar
bigfruit evening primrose
pricklypear
scrufpea or breadroot
white penstemon
knotweed
blackeyed Susan
dock
azure blue sage
sticky skullcap

Sisyrinchium campestre E.P. Bicknell
Typha sp. L.

prairie blue-eyed grass
cattail

Woody Plants

Amorpha canescens Pursh
Celtis laevigata Willd.
Parthenocissus quinquefolia (L.) Planch.
Quercus stellata Wangenh.
Rhus trilobata Nutt.
Rosa sp. L.
Smilax rotundifolia L.
Symphoricarpos orbiculatus Moench
Toxicodendron radicans (L.) Kuntze

leadplant
sugarberry
Virginia creeper
post oak
skunkbush sumac
rose
roundleaf greenbrier
coralberry
eastern poison ivy

As usual, the evening was late when we retired in Lawson, OK, for our second Mexican dinner.



***Left: Allium drummondii*, Drummond's onion
Right: Lepidium sp., pepperweed**



***Left: Oenothera macrocarpa*,
bigfruit evening primrose**

Inventory 15 - Black Kettle National Grasslands, US Forest Service, USDA (May 16)

Spanning 31,300 total acres in Oklahoma and Texas, the Black Kettle National Grassland is a haven for hunting, fishing, horseback riding, hiking, and observing nature. Of the total of 31,300 acres, 30,726 are located in Roger Mills County, near Cheyenne, OK. The grassland is located in a region of rolling sand hills, red shale hills, mixed-grass prairie, and wooded bottoms.



Once home to the nomadic Plains Indians, specifically the Cheyenne and Arapaho, the area is named for Cheyenne Chief Black Kettle. In 1868 Lt. Col. George Custer led an attack on Black Kettle's village, slaughtering the respected Cheyenne leader. The land then became part of the Cheyenne-Arapaho Reservation before it was opened for white settlement in 1892. Farmers successfully cultivated these lands until the 1930s, when poor soil conservation and agricultural practices,

combined with periods of wind, drought, and rain stripped the area of its topsoil. The region was one of the hardest hit by the Dust Bowl. After that, farmers abandoned the area. Beginning in 1937 through 1942, with Congressional approval, the federal government purchased tracts comprising the present grassland.



Left: Hymenopappus artemisiifolius, oldplainsman

Below: Asclepias asperula spp. capricornu, antelopehorns



Grasses

<i>Andropogon gerardii</i> Vitman	big bluestem
<i>Andropogon virginicus</i> L.	broomsedge bluestem
<i>Aristida oligantha</i> Michx.	prairie threeawn
<i>Bouteloua curtipendula</i> (Michx.) Torr.	sideoats grama
<i>Bouteloua dactyloides</i> (Nutt.) J.T. Columbus	buffalograss
<i>Bouteloua gracilis</i> (Willd. ex Kunth) Lag. ex Griffiths	blue grama
<i>Bromus catharticus</i> Vahl	rescuegrass
<i>Bromus tectorum</i> L.	cheatgrass
<i>Hordeum pusillum</i> Nutt.	little barley
<i>Sporobolus</i> sp. R. Br.	dropseed

Forbs

<i>Allium perdulce</i> S.V. Fraser	plains onion
<i>Ambrosia trifida</i> L.	great ragweed
<i>Asclepias asperula</i> (Decne.) Woodson ssp. <i>capricornu</i> (Woodson) Woodson	antelopehorns
<i>Astragalus</i> L.	milkvetch
<i>Castilleja purpurea</i> (Nutt.) G. Don var. <i>citrina</i> (Pennell) Shinnery	prairie Indian paintbrush
<i>Cirsium undulatum</i> (Nutt.) Spreng.	wavyleaf thistle
<i>Comandra umbellata</i> (L.) Nutt.	bastard toadflax
<i>Coreopsis grandiflora</i> Hogg ex Sweet	largeflower tickseed
<i>Dalea purpurea</i> Vent.	purple prairie clover
<i>Echinacea sanguinea</i> Nutt.	sanguin purple coneflower
<i>Engelmannia peristenia</i> (Raf.) Goodman & C.A. Lawson	Engelmann's daisy
<i>Eriogonum</i> Michx.	buckwheat
<i>Gaura coccinea</i> Nutt. ex Pursh	scarlet beeblossom
<i>Gaura longiflora</i> Spach	longflower beeblossom
<i>Grindelia</i> sp. Willd.	gumweed
<i>Gutierrezia sarothrae</i> (Pursh) Britton & Rusby	broom snakeweed
<i>Heterotheca villosa</i> (Pursh) Shinnery	hairy false goldenaster
<i>Hymenopappus artemisiifolius</i> DC.	oldplainsman
<i>Lepidium virginicum</i> L.	Virginia pepperweed
<i>Liatris elegans</i> (Walter) Michx.	pinkscale blazing star
<i>Linum lewisii</i> Pursh	Lewis flax
<i>Linum rigidum</i> Pursh	stiffstem flax
<i>Lomatium farinosum</i> (Hook.) J.M. Coult. & Rose	northern biscuitroot
<i>Lupinus subcarnosus</i> Hook.	Texas bluebonnet
<i>Matricaria discoidea</i> DC.	disc mayweed
<i>Melampodium leucanthum</i> Torr. & A. Gray	plains blackfoot
<i>Melilotus officinalis</i> (L.) Lam.	yellow sweetclover

<i>Mimosa asperata</i> L.	Puerto Rico sensitive-briar
<i>Oenothera macrocarpa</i> Nutt. ssp. <i>macrocarpa</i>	bigfruit evening primrose
<i>Oenothera sp.</i> L.	evening primrose
<i>Opuntia sp.</i> Mill.	pricklypear
<i>Pediomelum sp.</i> Rydb.	scrufpea or breadroot
<i>Penstemon cobaea</i> Nutt.	cobaea beardtongue
<i>Plantago ovata</i> Forssk.	desert Indianwheat
<i>Polygala alba</i> Nutt.	Nuttall's prairie parsley
<i>Schizachyrium scoparium</i> (Michx.) Nash	little bluestem
<i>Scutellaria resinosa</i> Torr.	sticky skullcap
<i>Sisyrinchium campestre</i> E.P. Bicknell	prairie blue-eyed grass
<i>Sphaeralcea coccinea</i> (Nutt.) Rydb.	scarlet globemallow
<i>Symphotrichum ericoides</i> (L.) G.L. Nesom	white heath aster
<i>Tragopogon dubius</i> Scop.	yellow salsify
<i>Zinnia grandiflora</i> Nutt.	Rocky Mountain zinnia

Woody Plants

<i>Rhus trilobata</i> Nutt.	skunkbush sumac
<i>Rhus typhina</i> L.	staghorn sumac
<i>Salix interior</i> Rowlee	sandbar willow

After leaving Black Kettle we headed for the Oklahoma City airport to drop of Wendall who needed to hurry home. Then we proceeded to our final inventory.

Inventory 16 - Salt Plains National Wildlife Refuge, US Fish and Wildlife Service, USDI. (May 16)

Established on March 26, 1930, Salt Plains National Wildlife Refuge is to provide quality habitat for migratory waterfowl. The refuge's namesake is designated as the "largest such saline flat in the central lowlands of North America". The 10,000 acre salt flat is only a third of the refuge land; The 32,000 acre refuge is complete with open water, wetlands, prairies, woodlands and farm fields.

In 1811, Sans Orielle, an Osage Indian, with others of his tribe guided Major George C. Sibley, Indian Agent from Fort Osage, Missouri, and his party to Salt Plains. They are thought to have been the first American white men to see the plains. Major Sibley called the area the Grand Saline and described it as "glistening like a brilliant field of snow in the summer sun" and estimated 600-800 buffalo were wandering about the salt flats. He also noted that "it has the effect of looming as the sailors called it, producing, to the unpracticed eye much delusion" (objects look closer than they are). The Salt Fork of the Arkansas River, flowing around the plain, was known to the Osages as Nescatunga (big salt water).

Grasses

<i>Andropogon hallii</i> Hack.	sand bluestem
<i>Andropogon virginicus</i> L.	broomsedge
<i>Bouteloua dactyloides</i> (Nutt.) J.T. Columbus	buffalograss
<i>Bromus</i> L.	brome
<i>Cynodon dactylon</i> (L.) Pers.	Bermudagrass
<i>Dichanthelium sphaerocarpon</i> (Elliot) Gould var. <i>sphaerocarpon</i>	roundseed panicgrass
<i>Elymus canadensis</i> L.	Canada wildrye
<i>Hordeum pusillum</i> Nutt.	little barley
<i>Juniperus virginiana</i> L.	eastern redcedar
<i>Panicum virgatum</i> L.	switchgrass
<i>Poa annua</i> L.	annual bluegrass
<i>Rhus glabra</i> L.	smooth sumac
<i>Schedonorus pratensis</i> (Huds.) P. Beauv.	meadow fescue
<i>Setaria</i> P. Beauv.	bristlegrass
<i>Sorghastrum nutans</i> (L.) Nash	Indiangrass
<i>Spartina pectinata</i> Bosc ex Link	prairie cordgrass
<i>Sporobolus</i> sp. R. Br.	dropseed
<i>Tridens flavus</i> (L.) Hitchc.	purpletop tridens
<i>Vulpia octoflora</i> (Walter) Rydb. var. <i>octoflora</i>	sixweeks fescue



Plantago patagonica, woolly plantain



Tragopogon dubius, yellow salsify

Forbs

<i>Achillea millefolium</i> L. var. <i>occidentalis</i> DC.	yarrow
<i>Ambrosia trifida</i> L.	great ragweed
<i>Carex</i> spp. L.	carex
<i>Galium aparine</i> L.	stickywilly
<i>Medicago polymorpha</i> L.	burclover
<i>Melilotus officinalis</i> (L.) Lam.	yellow sweetclover

<i>Neptunia lutea</i> (Leavenworth) Benth.	yellow puff
<i>Plantago patagonica</i> Jacq.	woolly plantain
<i>Rumex</i> spp. L.	dock
<i>Smilax tamnoides</i> L.	bristly greenbrier
<i>Taraxacum</i> F.H. Wigg.	dandelion
<i>Tragopogon dubius</i> Scop.	yellow salsify
<i>Typha</i> L.	cattail

Woody Plants

<i>Amorpha canescens</i> Pursh	leadplant
<i>Catalpa bignonioides</i> Walter	southern catalpa
<i>Cephalanthus occidentalis</i> L.	common buttonbush
<i>Cercis canadensis</i> L.	redbud
<i>Cornus drummondii</i> C.A. Mey.	roughleaf dogwood
<i>Cornus florida</i> L.	flowering dogwood
<i>Morus alba</i> L.	white mulberry
<i>Parthenocissus quinquefolia</i> (L.) Planch.	Virginia creeper
<i>Populus deltoides</i> Bartram ex Marsh. ssp. <i>monilifera</i> (Aiton) Ecken.	plains cottonwood
<i>Salix</i> spp. L.	willow
<i>Symphoricarpos orbiculatus</i> Moench	coralberry
<i>Toxicodendron radicans</i> (L.) Kuntze	eastern poison ivy
<i>Ulmus</i> L.	elm
<i>Vitis</i> sp. L.	grape

The end of another pleasant journey

From Salt Plains we return to our beginning, Wichita, and closed the book on another wonderful Trek.

We discussed at length our next trek. Stay tuned; 2011 isn't that far away. Could be we head into Holzworth country with a visit to the ever productive Bridger PMC. Just imagine the native grasses and wildflowers along the "Going to the Sun" highway over Glacier.



Special note on plant validation

All plant names are listed as in the PLANTS database. County maps were consulted in an effort to verify the presence of a species in the county. All Trek members consulted numerous references on site to verify our identification. Gaffney collected numerous samples which he and Carlson later resolved the correct identification

The End