

| <b>Year</b>   | <b>Date</b>          | <b>Activities</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Year 2</b> | May 20-21, 2010      | <p>This late spring collection trip was conducted in order to make a second trip to collect plants that flower in the late spring that we missed or did not collect in 2009. The duplicate trip for each of the season increased the number of plant species to allow for us to making a complete plant list of the area. This collection team consisted on four people and took 2 days. A summer trip was not conducted during year 2 due to the drought conditions.</p> <p>Collectors: Kelly Haile (25 hrs), Robert Haile (25 hrs) , Stephan Hatch (25 hrs) &amp; Erin Wied (25 hrs)</p> <p>Total=100 hrs</p>                                                                          |
| <b>Year 3</b> | Jun 27-28, 2011      | <p>The first collection trip during year 3 was delayed due to the lack of rain. This trip was made to observe the effects of the lack of rain and to make early summer plant collections. This gave us the opportunity to collect plants that we missed with the later spring and mid-summer collection trip previously conducted. This trip was also made to observe areas that we had not currently been to, to be sure that the same vegetation was in these areas and that we did not miss any plants. This team consisted on three people and took 2 days.</p> <p>Collectors: Kelly Haile (24 hrs), Katherine Haile (24 hrs), &amp; Stephan Hatch (24 hrs)</p> <p>Total= 72 hrs</p> |
|               | Aug 10, 2011         | <p>This trip was conducted for primarily mapping reason, to visit some of the areas that we had not visited and did not show a location point on the map. When visiting these sites, a location point was taken and the vegetation was observed to be sure that there was no new plant species that was not previously collected. This team consisted of two people and took 1 day.</p> <p>Observers: Kelly Haile (8 hrs) &amp; George Umphres (8 hrs)</p> <p>Total=16 hrs</p>                                                                                                                                                                                                           |
|               | September 9-10, 2011 | <p>This trip was designed to conduct transects for the Indicator Species Analysis and Cluster Analysis that was conducted on the Canyonlands Unit. 17 transect were conducted during this trip. Along with conducting transects plant species were observed and if a new on was found it was collected, pressed and added to the species list. This team consisted of two people and took 2 full days.</p> <p>Observers: Kelly Haile (20 hrs) &amp; George Umphres (20 hrs)</p> <p>Total= 40 hrs</p>                                                                                                                                                                                     |

November 14-15, 2011

This trip was conducted in order to complete the goal of 25 transects for the Indicator Species Analysis and Cluster Analysis for the Canyonlands Unit. This team consisted of two people and took 2 days.

Observers: Kelly Haile (15 hrs) & Robert Haile (15 hrs)  
Total= 30 hrs

**Total hours in Field since May 2010=258**

Identification/verification  
of plants

Multiple people had a hand in identifying and verifying the vascular plants collected at the Canyonlands Unit. Below is a list of hours spent on this portion of the project.

Stephan Hatch (20 hrs)

Dale Kruse (10 hrs)

Kelly Haile (75 hrs)

**Total hours spent on identification= 105**

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Below is a list of the family and genera of the vascular plants that have been collected and identified from the Canyonlands Unit of the Big Thicket National Preserve. Over 700 collections have been made throughout the time spent collecting in the Canyonlands Unit. There is a list of 376 different plant species. A species name is given for 38 of these plants. Not all the species are listed due to future publication. The number behind the genus in parenthesis indicates the number of species within that genus yet to be revealed. If no number follows a genus there is only one species found in that genus. The full report will all the species identified will be given once the project is completed and the work is published.

### *Pteridophyta*

#### ASPLENIACEAE

*Asplenium*

#### BLECHNACEAE

*Woodwardia*

#### DRYOPTERIDACEAE

*Athyrium*

*Onoclea*

*Polystichum*

#### LYGODIACEAE

*Lygodium*

#### OSMUNDACEAE

*Osmunda* (2)

#### POLYPODICEAE

*Pleopeltis*

PTERIDACEAE

*Pteris*

THELYPTERIDACEAE

*Thelypteris*

***Pinophyta***

PINACEAE

*Pinus taeda*

*Pinus echinata*

TAXODIACEAE

*Taxodium distichum*

***Magnoliophyta: Liliopsida***

AGAVACEAE

*Yucca*

ALISMATACEAE

*Sagittaria*

ARACEAE

*Arisaema* (2)

ARECACEAE

*Sabal*

BROMELIACEAE

*Tillandsia*

BURMANNIACEAE

*Apteria*

COMMELINACEAE

*Commelina*

*Tradescantia*

CYPERACEAE

*Carex* (10)

*Cyperus* (6)

*Rhynchospora* (4)

*Scirpus*

*Scleria* (2)

IRIDACEAE

*Sisyrinchium* (2)

JUNCACEAE

*Juncus* (5)

*Luzula*

LILIACEAE

*Allium*

*Hypoxis*

*Nothoscordum*

*Trillium*

POACEAE

*Agrostis*

*Andropogon* (4)

*Andropogon virginicus*

*Aristida* (4)

*Arundinaria*

*Axonopus fissifolius*

*Brachyelytrum*.

*Briza*

*Chasmanthium* (2)

*Cynodon dactylon*

*Dichanthelium* (12)

*Digitaria*

*Echinochloa walterii*

*Eragrostis* (4)

*Gymnopogon*

*Leersia* (3)

*Lolium*

*Melica*

*Mnesithea*

*Oplismenus*

*Panicum* (6)

*Panicum anceps*

*Paspalum* (3)

*Paspalum notatum*

*Paspalum setaceum*

*Paspalum urvillei*

*Piptochaetium*

*Poa* (2)

*Saccharum*

*Schizachyrium scoparium*

*Sorghastrum*

*Sphenopholis* (2)

*Sporobolus* (2)

*Tridens*

*Vulpia*

#### PONTEDERIACEAE

*Eichhornia*

#### SMILACACEAE

*Smilax* (7)

#### TYPHACEAE

*Typha* (2)

#### XYRIDACEAE

*Xyris*

### ***Magnoliophyta: Magnoliopsida***

#### ACANTHACEAE

*Justicia*

*Ruellia*

#### ACERACEAE

*Acer* (1)

*Acer rubrum*

#### ANACARDIACEAE

*Rhus*

*Toxicodendron radicans*

#### ANNONACEAE

*Asimina* (2)

APIACEAE

*Chaerophyllum*

*Hydrocotyle verticillata*

APOCYNACEAE

*Amsonia*

*Trachelospermum*

AQUIFOLIACEAE

*Ilex* (3)

*Ilex vomitoria*

ARALIACEAE

*Aralia*

ASCLEPIADACEAE

*Asclepias* (2)

*Cynanchum*

ASTERACEAE

*Ambrosia*

*Amphiachyris dracunculoides*

*Baccharis*

*Berlandiera* (2)

*Chrysopsis*

*Cirsium*

*Conyza canadensis*

*Coreopsis* (2)

*Croptilon*

*Elephantopus* (2)

*Erechtites*

*Erigeron*

*Eupatorium* (4)

*Gaillardia*

*Gamochaeta*

*Helenium* (2)

*Helianthus* (2)

*Heterotheca*

*Hymenopappus artemisiifolius*

*Krigia.*

*Liatris*

*Mikania scandens*

*Parthenium*

*Pityopsis*

*Pluchea* (2)

*Pyrrhopappus*

*Rudbeckia hirta*

*Verbesina*

*Vernonia* (2)

BERBERIDACEAE

*Podophyllum*

BETULACEAE

*Alnus*

*Carpinus*

*Ostrya*

BIGNONIACEAE

*Bignonia capreolata*

*Campsis radicans*

BORAGINACEAE

*Cynoglossum*

*Heliotropium*

*Myosotis*

BRASSICACEAE

*Cardamine*

BUDDLEJACEAE

*Polypremum*

CAMPANULACEAE

*Lobelia* (3)

*Triodanis*

*Wahlenbergia marginata*

CAPRIFOLIACEAE

*Lonicera japonica*

*Lonicera sempervirens*

*Sambucus* (2)

*Symphoricarpos*

*Viburnum* (3)

CARYOPHYLLACEAE

*Cerastium*

CLUSIACEAE

*Hypericum* (3)

CONVOLVULACEAE

*Ipomoea* (2)

CORNACEAE

*Cornus florida*

*Nyssa* (2)

CYRILLACEAE

*Cyrilla*

DROSERACEAE

*Drosera*

ERICACEAE

*Lyonia*

*Rhododendron*

*Vaccinium* (2)

EUPHORBIACEAE

*Chamaesyce*

*Cnidoscolus*

*Croton* (2)

*Sapium*

*Sebastiana*

*Stillingia*

*Tragia*

FABACEAE

*Albizia julibrissin*

*Baptisia* (2)

*Cercis canadensis*

*Chamaecrista fasciculata*

*Crotalaria*

*Dalea*  
*Dioclea*  
*Erythrina*  
*Lespedeza*  
*Medicago* (1)  
*Mimosa* (2)  
*Rhynchosia*  
*Sesbania* (2)  
*Strophostyles*  
*Stylosanthes*  
*Tephrosia*

FAGACEAE

*Castanea*  
*Fagus*  
*Quercus* (8)  
*Quercus marilandica*  
*Quercus stellata*

GENTIANACEAE

*Sabatia*

GROSSULARIACEAE

*Itea*

HALORAGACEAE

*Myriophyllum*  
*Proserpinaca*

HAMAMALIDACEAE

*Hamamelis* (2)  
*Liquidambar*

HIPPOCASTINACEAE

*Aesculus*

JUGLANDACEAE

*Carya* (5)

LAMIACEAE

*Monarda*  
*Salvia lyrata*

*Scutellaria* (3)

LAURACEAE

*Persea*

*Sassafras*

LENTIBULARIACEAE

*Utricularia*

LINACEAE

*Linum*

LOGANIACEAE

*Gelsemium*

MAGNOLIACEAE

*Magnolia* (2)

MONOTROPACEAE

*Monotropa*

MORACEAE

*Morus*

MYRICACEAE

*Myrica*

OLEACEAE

*Chionanthus*

*Fraxinus* (3)

*Ligustrum*

ONAGRACEAE

*Ludwigia*

OROBANCHACEAE

*Epifagus*

OXALIDACEAE

*Oxalis* (2)

PASSIFLORACEAE

*Passiflora*

PHYTOLACCACEAE

*Phytolacca*

PLANTAGINACEAE

*Plantago* (2)

PLATANACEAE

*Platanus occidentalis*

POLYGALACEAE

*Polygala* (3)

POLYGONACEAE

*Brunnichia*

*Polygonum* (2)

*Rumex*

PRIMULACEAE

*Anagallis arvensis*

*Samolus*

RANUNCULACEAE

*Clematis* (3)

*Ranunculus* (2)

RHAMNACEAE

*Berchemia*

*Ceanothus*

*Rhamnus*

ROSACEAE

*Crataegus* (2)

*Duchesnea*

*Geum*

*Prunus* (2)

*Rubus* (2)

RUBIACEAE

*Cephalanthus occidentalis*

*Diodia*

*Galium* (2)

*Houstonia* (2)

*Mitchella*

RUTACEAE

*Zanthoxylum*

SALICACEAE

*Populus deltoides*

SALVINIACEAE

*Salvinia minima*

SAPOTACEAE

*Sideroxylon*

SAURURACEAE

*Saururus*

SCROPHULARIACEAE

*Mecardonia*

*Scoparia*

SOLANACEAE

*Solanum*

STYRACACEAE

*Halesia*

SYMPLOCACEAE

*Symplocos*

ULMACEAE

*Celtis*

*Planera*

*Ulmus* (2)

URTICACEAE

*Pilea*

VERBENACEAE

*Glandularia* (2)

*Callicarpa americana*

*Verbena*

VIOLACEAE

*Viola* (2)

VITACEAE

*Parthenocissus*

*Vitis* (5)

| <b>Phylum</b> | <b>Class</b>  | <b>Family</b> | <b>Number of genera</b> | <b>Number of species</b> |
|---------------|---------------|---------------|-------------------------|--------------------------|
| Pteridophyta  | Filicopsida   | 8             | 10                      | 11                       |
| Pinophyta     | Pinopsida     | 2             | 2                       | 3                        |
| Magnoliophyta | Liliopsida    | 16            | 54                      | 123                      |
| Magnoliophyta | Magnoliopsida | 72            | 170                     | 239                      |
|               | Totals=       | 98            | 236                     | 376                      |

Above is a table summarizing the data that we have to this point from the Canyonlands Unit. We currently have 376 plants identified and verified to species. As mentioned before, the entire species list with species names will be released once project is completed and ready for publication.

## **Comparison of the Grass Flora across Selected Units of the Big Thicket National Preserve**

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A comparison was made of the grass flora reported within the Hickory Creek, Beech Creek, Turkey Creek and Canyonlands Units of the Big Thicket National Preserve. These units are compared by number of grass species within each unit along with the different numbers of tribe and genera. A total number of species will be calculated and within each unit. Each species wetland indicator status is presented and the percentages of each indicator value are compared between the different units. The longevity, season of flowering, and origin of each species will also be presented. A special note will be made on species that are considered to be invasive in this region.

These first three sites were chosen because of their location relative to the Canyonlands Unit. The Hickory Creek Unit 668 acres, Turkey Creek Unit 7800 acres, Beech Creek Unit 4856 acres and the Canyonlands Unit 1476 acres.

The species list for the Hickory Creek, Beech Creek and Turkey Creek units are taken from previous floristic studies that have taken place in these units. The species information for the Canyonlands Unit will be from our floristic study of this unit.