

**15240**

## **Edwards Plateau Mesic Canyon**

BpS Model/Description Version: Aug. 2020

| <b>Modelers</b>  |                                                                          | <b>Reviewers</b> |                                                                |
|------------------|--------------------------------------------------------------------------|------------------|----------------------------------------------------------------|
| Charlotte Reemts | <a href="mailto:creemts@tnc.org">creemts@tnc.org</a>                     | Chuck Sexton     | <a href="mailto:chuck_sexton@fws.gov">chuck_sexton@fws.gov</a> |
| Joseph White     | <a href="mailto:Joseph_D_White@baylor.edu">Joseph_D_White@baylor.edu</a> | None             | None                                                           |
| None             | None                                                                     | None             | None                                                           |

**Reviewer:** Charlotte Reemts; [creemts@tnc.org](mailto:creemts@tnc.org)

### **Vegetation Type**

Forest and Woodland

### **Map Zone**

35

### **Geographic Range**

This system is largely endemic to the Edwards Plateau ecoregion and occurs on canyon bottoms, mesic lower slopes, and steep canyons, primarily in the Southern Balcones Escarpment but also in the Eastern Balcones Escarpment.

### **Biophysical Site Description**

This system also includes areas of cliff faces and lower slopes of boxed canyons occurring as narrow, sometimes long bands in areas where moisture is consistently more available than on adjacent slopes, often with seeps.

### **Vegetation Description**

The tree canopy is generally closed. Common components include cedar elm (*Ulmus crassifolia*), Arizona walnut (*Juglans major*), Buckley oak (*Quercus buckleyi*), Lacey oak (*Q. laceyi*), little black cherry (*Prunus serotina* var. *eximia*) (becoming less common to the north), Texas ash (*Fraxinus texensis*) (dominant in the northeastern plateau), chinkapin oak (*Q. muehlenbergii*), and bigtooth maple (*Acer grandidentatum*). Canyon bottoms may have scattered bur oak (*Q. macrocarpa*). Substrate (limestone) and topographic position (north and east aspects and lower slopes) are the dominant characteristics of this system. Small seepage areas are often dominated by common maidenhair (*Adiantum capillus-veneris*), with Lindheimer's marsh fern (*Thelypteris ovata* var. *lindheimeri*) on nearby moist habitats. Other prominent species include wand butterflybush (*Buddleja racemosa*), Mexican buckeye (*Ungnadia speciosa*), and eastern poison ivy (*Toxicodendron radicans* ssp. *eximium*). This system may include small patch inclusions of more riparian-related vegetation that usually occurs at a scale that will be difficult to distinguish using remote sensing (may be referred to as wooded draws). Mesic canyon vegetation descriptions may include minor components of riparian species already.

### **BpS Dominant and Indicator Species**

| <b>Symbol</b> | <b>Scientific Name</b>       | <b>Common Name</b> |
|---------------|------------------------------|--------------------|
| ACGR3         | <i>Acer grandidentatum</i>   | Bigtooth maple     |
| ULCR          | <i>Ulmus crassifolia</i>     | Cedar elm          |
| QUMU          | <i>Quercus muehlenbergii</i> | Chinkapin oak      |

|       |                          |                |
|-------|--------------------------|----------------|
| JUMA  | <i>Juglans major</i>     | Arizona walnut |
| QUBU2 | <i>Quercus buckleyi</i>  | Buckley oak    |
| PRSE2 | <i>Prunus serotina</i>   | Black cherry   |
| FRTE  | <i>Fraxinus texensis</i> | Texas ash      |
| QULA  | <i>Quercus laceyi</i>    | Lacey oak      |

Species names are from the NRCS PLANTS database. Check species codes at <http://plants.usda.gov>.

### Disturbance Description

Fire probably plays little role in the system, while grazing and browsing (by native as well as exotic ungulates) may play an important role in recruitment and understory composition. Flood and associate landslide likely impact community at a low frequency.

### Fire Frequency

| Severity         | Avg FI | Percent of All Fires | Min FI | Max FI |
|------------------|--------|----------------------|--------|--------|
| Replacement      | 139    | 44                   |        |        |
| Moderate (Mixed) |        |                      |        |        |
| Low (Surface)    | 109    | 56                   |        |        |
| All Fires        | 61     | 100                  |        |        |

Fire interval is expressed in years for each fire severity class and for all types of fire combined (All Fires). Average FI is the central tendency modeled. Percent of all fires is the percent of all fires modeled in that severity class. Minimum and Maximum FIs show the relative range of fire intervals as estimated by model contributors, if known.

### Scale Description

Limited to canyons with maximum widths from 50-300m from top to bottom of canyon.  
Associated with steep terrain.

### Adjacency or Identification Concerns

The following systems are considered adjacent:

- Edwards Plateau Cliff (CES303.653)
- Edwards Plateau Dry-Mesic Slope Forest and Woodland (CES303.656)
- Edwards Plateau Floodplain Terrace (CES303.651)
- Edwards Plateau Limestone Savanna and Woodland (CES303.660)
- Edwards Plateau Limestone Shrubland (CES303.041)
- Edwards Plateau Riparian (CES303.652)
- Edwards Plateau Upland Depression (CES303.654)
- Llano Uplift Granitic Forest, Woodland and Glade (CES303.657)

### Issues or Problems

It may be difficult to distinguish this Biophysical Setting from the Edwards Plateau Dry-Mesic Slope Forest and Woodland. The major difference between the two is the lack of juniper in the slope forest and woodland.

### Native Uncharacteristic Conditions

Over-browsing by native and exotic ungulates can suppress/kill smaller stems (e.g., the regeneration). See Russell 2004 and Dickinson 2016.

### Comments

## Succession Classes

### Mapping Rules

| Upper Layer Lifeform | Height (m) | Canopy Cover (%) |       |       |       |       |       |       |       |       |        |
|----------------------|------------|------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
|                      |            | 0-10             | 11-20 | 21-30 | 31-40 | 41-50 | 51-60 | 61-70 | 71-80 | 81-90 | 91-100 |
| Herb                 | 0-0.5      | A                | A     | A     | A     | A     | A     | A     | A     | A     | A      |
| Herb                 | 0.5-1.0    | A                | A     | A     | A     | A     | A     | A     | A     | A     | A      |
| Herb                 | >1.0       | A                | A     | A     | A     | A     | A     | A     | A     | A     | A      |
| Shrub                | 0-0.5      | UN               | UN    | A     | A     | A     | A     | A     | A     | A     | A      |
| Shrub                | 0.5-1.0    | UN               | UN    | A     | A     | A     | A     | A     | A     | A     | A      |
| Shrub                | 1.0-3.0    | UN               | UN    | A     | A     | A     | A     | A     | A     | A     | A      |
| Shrub                | >3.0       | UN               | UN    | A     | A     | A     | A     | A     | A     | A     | A      |
| Tree                 | 0-5        | UN               | UN    | UN    | UN    | UN    | B     | B     | B     | B     | B      |
| Tree                 | 5-10       | UN               | UN    | UN    | UN    | UN    | B     | B     | B     | C     | C      |
| Tree                 | 10-25      | UN               | UN    | UN    | UN    | UN    | B     | B     | B     | C     | C      |
| Tree                 | 25-50      | UN               | UN    | UN    | UN    | UN    | B     | B     | B     | C     | C      |
| Tree                 | >50        | UN               | UN    | UN    | UN    | UN    | B     | B     | B     | C     | C      |

Succession class letters A-E are described in the Succession Class Description section. Some classes use a leafform distinction where a qualifier is added to the class letter: Brdl (broadleaf), Con (conifer), or Mix (mixed conifer and broadleaf). UN refers to uncharacteristic native or a combination of height and cover that would not be expected under the reference condition. NP refers to not possible or a combination of height and cover which is not physiologically possible for the species in the BpS.

### Description

**Class A**      **7**      **Early Development 1 - Open**

#### Indicator Species

| Symbol | Scientific Name   | Common Name | Canopy Position |
|--------|-------------------|-------------|-----------------|
| QUBU2  | Quercus buckleyi  | Buckley oak | Upper           |
| ULCR   | Ulmus crassifolia | Cedar elm   | Upper           |
|        | Quercus laceyi    | Lacey oak   |                 |

#### Description

Early stage characterized as shrubby that initiates following infrequent canopy fire. Mostly dominated by root-sprouting species.

#### Maximum Tree Size Class

Sapling >4.5ft; <5" DBH

**Class B**      **15**      **Mid Development 1 - Closed**

#### Indicator Species

| Symbol | Scientific Name   | Common Name | Canopy Position |
|--------|-------------------|-------------|-----------------|
| QUBU2  | Quercus buckleyi  | Buckley oak | Upper           |
| ULCR   | Ulmus crassifolia | Cedar elm   | Upper           |



|              |           |           |      |     |    |   |
|--------------|-----------|-----------|------|-----|----|---|
| Surface Fire | Late1:CLS | Late1:CLS | 0.01 | 100 | No | 0 |
|--------------|-----------|-----------|------|-----|----|---|

## References

Dickinson, T. L. N. and O. W. V. Auken (2016). "Survival, Growth, and Recruitment of Bigtooth Maple (*Acer grandidentatum*) in Central Texas Relict Communities." Natural Areas Journal 36(2): 174-180.

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