

Forests and Woodlands

F –PECN *Carya illinoensis* – *Celtis laevigata* Forest
Pecan – Sugar Hackberry Forest

Associations and Alliances

Carya illinoensis – *Celtis laevigata* Forest

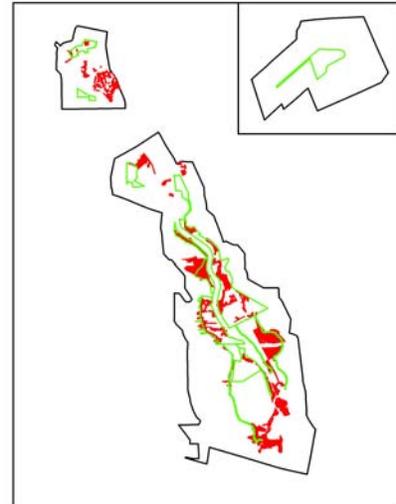
Common Species

Carya illinoensis
Celtis laevigata
Acer negundo
Melia azedarach
Cornus drummondii
Rubus riograndis
Toxicodendron radicans
Ambrosia trifida
Calyptocarpus vialis
Galium aparine
Malvaviscus arboreus
Torilis arvensis
Elymus virginicus

Description

This map class represents two successional stages that were found exclusively in the Missions area of SAAN. The late successional phase is well developed and may include remnant old-growth forest. This phase occurs on the natural terraces that still exist behind the raised artificial levees. This sub-type is characterized by a tall canopy dominated by *Carya illinoensis* or *Acer negundo* with a dense subcanopy and/or understory of *Celtis laevigata*. The mid-successional phase occurs on the raised artificial levees or on lower natural terraces where the forest or riverine savanna was cleared. This subtype has shorter trees dominated by *Celtis laevigata*. Both subtypes can contain stands of non-natives, especially *Melia azedarach* and *Ligustrum japonicum*. The presence of *Celtis laevigata* in this type as well as in the Elm – Sugarberry / Possum-haw / Virginia Wild Rye Forest likely caused some confusion in the mapping between them. Similarly, large stands of *Melia azedarach* and *Ligustrum japonicum* present in this type may have been missed or their polygons mislabeled. On the 2003 imagery this type had a characteristic winter deciduous tree signature that was a puffy, dark gray. This type was mapped primarily based on the height of the trees and their proximity to the San Antonio River and its tributaries. The late successional phase was distinguished in the mapping from the mid successional phase based on the height and density modifiers.

Range and Distribution



Representative Ground Photo



Photo Signature Example

CEGL002087 *Carya illinoensis* – *Celtis laevigata* Forest

Translated Name: Pecan – Sugarberry Forest

Common Name: Pecan – Sugarberry Forest

ENVIRONMENTAL DESCRIPTION

The environmental factors that influence the composition and structure of this community are: climate, topography, soils, and past management. This community occurs on the original terraces and natural levees, as well as some artificial terraces and levees (from fill dredged for channelization) bordering the San Antonio River. The community occurs on silty clays and clay loam originally derived from silt and clay alluvium. Immediately adjacent to the channelized banks of the river, the clay soils overlie gravel fill dredged from the river channel. Water availability is less than in pre-urbanized times due to lowering of the water table through channelization and rising of the levees along the channel. Composition of tree species at any given site is probably largely dependent on past management, particularly tree removal, fire suppression, and introduction of exotic species. Flooding of major proportions does not occur as it once did due to impoundments and channelization along the river.

VEGETATION DESCRIPTION

This community consists of two phases—a late successional phase and a mid-successional phase. The late successional phase is the best developed and may include remnant old-growth forest. This phase occurs on the natural terraces and levees that still exist behind the raised artificial levees. These sites tend to coincide with remnants of the natural channels of the San Antonio River and courses of tributaries to the San Antonio River. Here, the canopy varies from 15 to 25 m high, producing 60 to 90 percent cover, and is dominated by *Carya illinoensis* or *Acer negundo* with a dense subcanopy and/or understory of *Celtis laevigata*. The invasive exotic *Melia azedarach* is a common associate. The shrub layer is usually sparse, consisting of saplings and scattered shrubs of *Cornus drummondii* and *Sambucus nigra*. The ground layer is also usually sparse, not exceeding 50% cover and consisting of seedlings, low shrubs (*Toxicodendron radicans* sprouts) and vines (*Ampelopsis arborea*, *Rubus riograndis*, *Vitis mustangensis*) and shade-tolerant forbs (*Ambrosia trifida*, *Calyptocarpus vialis*, *Galium aparine*, *Lactuca floridana*, *Malvaviscus arboreus*, *Symphotrichum lanceolatum*, *Torilis arvensis*, *Verbesina virginica*) and grasses (*Chasmanthium latifolium*, *Elymus virginicus*).

The mid-successional phase occurs on the raised artificial levees or on lower natural terraces where the forest or riverine savanna was cleared, either in conjunction with the construction of the *labores* by the Spanish missions or later in conjunction with urban development. These sites show remnants of dead thorn trees suggesting that they have progressed through **Old Field** and **Acacia farnesiana** – (***Prosopis glandulosa***) **Woodland** seres. Here the canopy rarely exceeds 15 m high, but the cover is consistently about 75%. It is dominated by *Celtis laevigata*, except in sites where the invasive *Melia azedarach* got an early foothold. The invasive *Ligustrum japonicum* is commonly associated. The ground layer often covers up to 70% of the surface and is heavily dominated by *Galium aparine* and *Torilis arvensis*. Otherwise, the structure is similar

to the late-successional phase. On the natural terraces, this phase is expected to progress to the late successional phase. However, on the raised artificial levees, it is unknown whether there is sufficient water availability for trees of *Carya illinoensis* or *Acer negundo* eventually to become established and dominant.

FLORISTIC COMPOSITION

<u>Species Name</u>	<u>Stratum</u>	<u>Lifeform</u>
<i>Carya illinoensis</i>	Tree (canopy & subcanopy)	Broad-leaved deciduous tree
<i>Celtis laevigata</i>	Tree (canopy & subcanopy)	Broad-leaved deciduous tree
<i>Acer negundo</i>	Tree (canopy & subcanopy)	Broad-leaved deciduous tree
<i>Melia azedarach</i>	Tree (canopy & subcanopy)	Broad-leaved deciduous tree
<i>Cornus drummondii</i>	Shrub/sapling (tall & short)	Broad-leaved deciduous shrub
<i>Rubus riograndis</i>	Herb (field)	Other shrub
<i>Toxicodendron radicans</i>	Herb (field)	Other shrub
<i>Ambrosia trifida</i>	Herb (field)	Forb
<i>Calypocarpus vialis</i>	Herb (field)	Forb
<i>Galium aparine</i>	Herb (field)	Forb
<i>Malvaviscus arboreus</i>	Herb (field)	Forb
<i>Torilis arvensis</i>	Herb (field)	Forb
<i>Elymus virginicus</i>	Herb (field)	Graminoid

OTHER NOTEWORTHY SPECIES

<u>Species Name</u>	<u>GRank</u>	<u>Animal</u>	<u>Note (specify Rare (geog area), Invasive, Animal, or Other)</u>
<i>Galium aparine</i>			Subinvasive alien
<i>Ligustrum japonicum</i>			Invasive alien
<i>Melia azedarach</i>			Invasive alien
<i>Torilis arvensis</i>			Invasive alien

CLASSIFICATION & OTHER COMMENTS

Classification Comments: Further research may support separating the mid-successional phase from the late successional phase as two distinct vegetation classes.

Other Comments:

ELEMENT DISTRIBUTION

This unit occurs in the San Antonio unit only. It is best developed on the west side of the San Antonio River south of the New Espada Dam back of the raised levees. It occurs on the east side of the river in Acequia Park on the raised levees and behind them, as well as along the nature trail below Mission San Juan. At Mission San José, it occurs north east of the mission in an area where invasive alien species were recently removed.

ELEMENT SOURCES

Inventory Notes:

Plots: SAAN.1, SAAN.5, SAAN.9, SAAN.11, SAAN.12, SAAN.14, SAAN.20

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