

IS IT PRICKLY PEAR OR THE PLAINS PRICKLY PEAR?

The Prickly Pear is The State Plant of Texas. Actually, all members of its genus *Opuntia* (with flat stems) are considered the state plant; members of another genus, *Cylindropuntia*, are not. See our Talking Point on Tasajillo (*Cylindropuntia leptocaulis*). *Cylindropuntia* are cylindrical cacti including the chollas. While numerous in Phil Hardberger Park and lovely, the Tasajillo is not our state plant.

We have identified two *Opuntia* species in Phil Hardberger Park. This chart helps to distinguish between them. The far more common and much larger one is *Opuntia engelmannii* var. *lindheimeri**. The far less common and smaller one is the ground-hugging *Opuntia macrorhiza*. Information for this chart comes from Texas Cacti by Loflin, B. & Loflin, S. (Texas A&M Press, 2009) and Shinnery and Mahler's Illustrated Flora of North Central Texas (<http://www.brit.org/brit-press/nectexasflora>, 1999).

OPUNTIA SPECIES	<i>Opuntia engelmannii</i> var. <i>lindheimeri</i>*	<i>Opuntia macrorhiza</i>
COMMON NAME	Texas Prickly Pear	Plains Prickly Pear
GROWTH FORM	Large to 6' Shrub-like with ascending branches Erect	Low to ground usually <18" Clump-forming to 6' wide Nearly prostrate
PAD	Broadly obovate to orbicular (round) Large to 12" by 12" Tends to be very flat	Obovate to orbicular (round) Smaller to 6" by 6" Tends to wrinkle , especially when stressed
FLOWER	Brilliant yellow without red center March to June	Yellow with red center April to June
TUNA	Ovoid or pyriform Reddish purple to purple	Elongated ; obovate to 4 cm Green to yellowish to red
SPINES	Cream to yellow Stout and flattened at base	White Not flattened at base
AREOLES	4.5 to 6 mm; far apart; few on pad Filled with tan to gray wool	2 to 4 mm Dense brownish-gray wool
GLOCHIDS	Around perimeter of areoles Dirty yellow	Dense tuft Pale yellow or reddish brown

* Plants of the World Online, iNaturalist's official plant source, lists *O. pyrocarpa* as a synonym of *O. engelmannii* var *lindheimeri*. Another *Opuntia*, *O. engelmannii* var. *engelmannii*, is the variety found in West Texas.

OTHER OPUNTIA SPECIES IN BEXAR COUNTY

NOTE: Before we plunge into this we need to keep in mind what Floyd Waller (author of our Grass Talking Point, member of the Cactus Society, and a PHD specializing in taxonomy) says: one needs to choose their authority carefully, recognize the genus Opuntia needs DNA studies, and accept there will be ID issues given whatever choice in authority is made. This section presents my understanding of the common books a Master Naturalist would encounter. But the next section gives another perspective on the genus.

Texas Cacti, cited above, presents photos and information on about 25 Texas *Opuntia* species, very close to the 24 species of *Opuntia* the Lady Bird Johnson Wildflower Center lists for Texas. Six of the 25 have distribution maps in Texas Cacti including Bexar County. However, two of the six we are not likely to see in nature in Bexar County: *Opuntia engelmannii linguiformis* and *Opuntia camanchica*. The former was actually discovered in the San Antonio area; however, it is now thought to be only seen as a horticultural specimen grown for its striking form but not found outside cultivation. The latter has a range very much to the west of us and into far West Texas. iNaturalist has a couple of unverified observations of *Opuntia camanchica* in Hunt and Vanderpool but the USDA Plants database does not map it to Bexar County.

Besides the two *Opuntia* species found in Phil Hardberger Park (*O. engelmannii* var. *lindheimeri* and *O. macrorhiza*), Bexar County probably has some *Opuntia phaeacantha* whose range while generally west is nonetheless listed by USDA as in Bexar and several adjoining counties. Its chief characteristic is weak stems and pads that sag or lie on the ground in winter. Another the USDA includes in Bexar County is *Opuntia humifusa* whose range though is mainly to the east. It is characterized by being low (2 segments at most), spines often absent, and pads which wrinkle under stress.

See also BONAP's (The Biota of North America Program (North American Vascular Flora)) North American Plant Atlas for range maps generally supporting the previous paragraph:

<http://bonap.net/Napa/TaxonMaps/Genus/County/Opuntia>

ANOTHER TAKE ON OPUNTIA SPECIES IN BEXAR COUNTY

NOTE: This section illustrates the complexity of taxonomy. While David Ferguson's work cited below is compelling and, at this time, Plants of the World Online, iNaturalist's official source gives O. orbiculata in Texas, the USDA, Lady Bird Johnson Wildflower Center, and the Loflin book cited above do not.

Going back to our expert, Floyd Waller, he states: "The best picture book of Texas cacti in their natural habitat is Cacti of Texas by G. and A Konings. They follow David Ferguson on this genus and say that O. orbiculata is the most common species in North and Central Texas. [I think on other taxa they follow Powell and Weedin very well.]

Powell and Weedin in their two books of Texas cacti do not mention O. orbiculata, nor does Donald Pinkava, a recognized Opuntia authority, in Flora North America. Powell and Spellenburg in the new Flowering Plants of the Trans-Pecos and Adjacent Areas mention that the Konings and David Ferguson recognize a few additional species in Texas (including O. orbiculata) but do not treat them, just saying there is more understanding needed.

The Konings actually treat O. engelmannii and O. lindheimeri as separate species instead of varieties but Powell and Spellenburg retain them. If Ferguson and the Konings are right, then much of what we have called O. e. var. lindheimeri is O. orbiculata. I think full scale DNA studies are now required"

It is quite possible reality is more complicated than my simple exposition above, "Other Opuntia Species in Bexar County". In this paragraph we present David Ferguson's conclusions (see his profile on iNaturalist) as well as his detailed comments on observation 26757968. David spent over 50 years closely studying the genus *Opuntia*). He concludes:

- 1) *O. engelmannii* is a "garbage can" name.
- 2) Based on original descriptions there is no true *O. engelmannii* in Central Texas; it is a Trans-Pecos species.
- 3) *O. orbiculata* is a Bexar County species.
- 4) There are close to a dozen species of *Opuntia* in Central Texas

OPUNTIA SPECIES	<i>Opuntia engelmannii</i> var. <i>lindheimeri</i>*	<i>Opuntia orbiculata</i>
COMMON NAME	Texas Prickly Pear	Western Prickly Pear
GROWTH FORM	Large to 6' Shrub-like with ascending branches Erect	Often wider than tall
PAD	Broadly obovate to orbicular (round) Large to 12" by 12" Tends to be very flat	Often nearly orbicular Tends to be very thick
FLOWER	Brilliant yellow without red center March to June	
TUNA	Ovoid or pyriform Reddish purple to purple	More barrel-shaped
SPINES	Cream to yellow Stout & flattened at base 5-6 per areole	Usually white or yellowish Less sturdy & not flattened at base Fewer spines per areole
AREOLES	4.5 to 6 mm; far apart; few on pad Filled with tan to gray wool	Smaller; close; few on pad
GLOCHIDS	Around perimeter of areoles Mixed sizes and scattered Dirty yellow	Even sizes & neatly arranged in concentric circles