

30. *Parkinsonia microphylla* / *Opuntia engelmannii* / *Encelia farinosa* Shrubland Association (P)

Yellow paloverde / Cactus apple / Brittlebush Shrubland Association (P)

This shrubland community is characterized by a sparse (<10% cover) canopy (2–5 m) of yellow paloverde (*Parkinsonia microphylla*), a variable (5–25% cover) subcanopy (0.5–2 m) of cactus apple (*Opuntia engelmannii*), and a moderately dense (15–30% cover) field layer (<0.5 m) solely dominated by brittlebush (*Encelia farinosa*). Yellow paloverde (*P. microphylla*) is consistently (1.0) present as scattered, large (4 m), tree-like individuals with average cover of around 5%, including some areas up to 15%. Occasionally (0.60), velvet mesquite (*Prosopis velutina*) can co-occur with yellow paloverde (*P. microphylla*), with cover of around 1%, or present as the sole canopy tree with up to 5% cover. The subcanopy is characterized by a diverse mix of shrubs and succulents, with creosote (*Larrea tridentata*) and cactus apple (*O. engelmannii*) providing the most cover throughout. Cactus apple (*O. engelmannii*) is a fairly consistent (0.80) dominant, averaging 7% cover across the community, including areas up to 16%. Creosote (*L. tridentata*) is a less-consistent (0.70) associate that typically provides sparse (<1%) cover, occasional pockets of co-dominance with cactus apple (*O. engelmannii*), or sole dominance within the stratum, often with 10–20% cover. The field layer (<0.5 m) is consistently dominated (1.0) by the low subshrub, brittlebush (*E. farinosa*), which provides an average cover of 20%, with areas ranging from 12% to 30%. The consistent dominance of this species and low cover of associate species are defining characteristics of this association.

Common species

- *Parkinsonia microphylla*
- *Opuntia engelmannii*
- *Larrea tridentata*
- *Encelia farinosa*

This community covers 1.8% (478 ha/1,181 ac) of the Rincon Mountain District and is widespread across the rolling hills within the Cactus Forest Loop Road area, especially along the western boundary. It is often found on small, low-angle (<25%) rolling hills of variable aspects from 820–945 meters (2,609–3,100 ft). In general, the surface cover is characterized by shallow, well-drained skeletal loam and clay underlying a layer of coarse (5–10 cm) gravel with scattered rocks. Typically, the rock and gravel are composed of a fine-grained meta-quartzite with occasional areas of rhyolitic tuff.



Rincon Mountain District, Saguaro National Park

