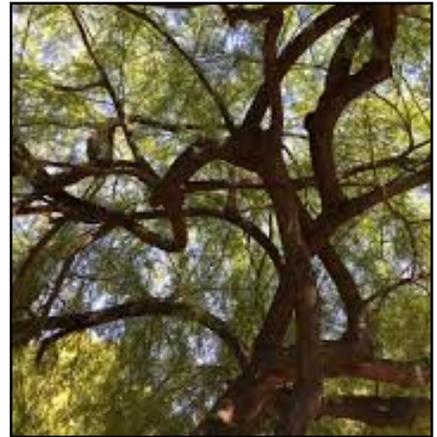


BEAUTIFUL, BOUNTIFUL, BENEFICIAL BEAN TREES

Not one, but two rainy seasons make the AZ Uplands and Plains of Sonora subdivisions of the Sonoran Desert special, because plentiful summer and winter rains support the growth of native bean trees like mesquite, ironwood and palo verde. These bean trees provide multiple benefits to the ecosystem and to people, including the production of nutritious pods and seeds. Bean trees characterize the low desert landscape around the Tucson area, often called the Saguaro-Palo Verde or Saguaro-Ironwood Forest. All three main bean trees act as nurse trees for the rare and sacred saguaro cactus.



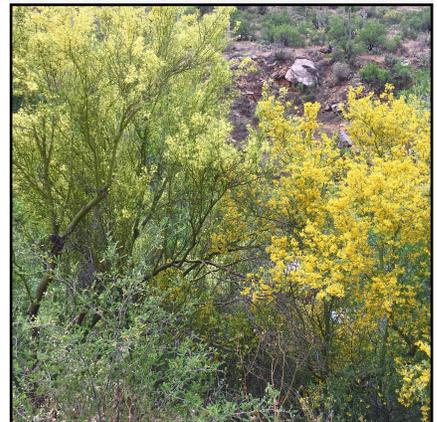
Velvet mesquite tree, *Prosopis velutina*

Having evolved with the climate over many thousands of years, Sonoran Desert bean trees are drought- and heat-tolerant, relatively long-lived, and have interconnected relationships with other desert plants, animals, and soil organisms. Bean trees anchor desert plant communities with their above- and below-ground structure, micro-climate moderation, nitrogen-fixing abilities, large canopies that provide shade and cooling, and their beautiful presence and spirit. Bean trees are considered keystone species for these and other reasons. Mesquite, palo verde, and desert ironwood trees bloom in mass profusion in Spring, providing nectar and pollen for desert pollinators.



Desert ironwood tree, *Olneya tesota*

As members of the Fabacea or legume plant family, Sonoran Desert bean trees, including palo verde, mesquite, and ironwood, between the three of them, produce edible flower buds, flowers, pods, seeds, sap, and, indirectly, honey. Heat and drought-tolerant bean trees and other native plants benefit from and often grow faster with supplemental rainwater, collected in adjacent catchment basins or stored in cisterns for use during non-rainy seasons like dry summer and autumn. Dropped leaves, flowers, pods, and branches add organic matter and enrich desert soils that often lack these materials.



Foothills and Blue palo verde trees, *Cercidium microphylla* and *Cercidium floridum*

BEAUTIFUL, BOUNTIFUL, BENEFICIAL BEAN TREES

BEAUTIFUL BEAN TREES:

Brighten the desert with colorful flowers in Spring
Provide much-needed shade and cool micro-environments
Grow expressive, sculptural trunks and branches
Palo verdes have stunning bright green bark
Produce abundant, nutritious pods in Dry Summer, Fall
Inspire art, poetry, care for place, and culinary creations



Desert ironwood in bloom



Ancient desert ironwood tree



Bean tree pods, seeds, etc



Blue palo verde flowers



Velvet mesquite flowers



Lichen-covered desert ironwood stump



Blue palo verde stamp

BEAUTIFUL, BOUNTIFUL, BENEFICIAL BEAN TREES

BOUNTIFUL BEAN TREES:

Offer reliable annual yields, even in extreme heat, drought
Provide nutritious and delicious seeds and pods
Develop thousands of blossoms, with nectar for pollinators
Are long-lived, providing resources for many generations
Even dead, provide habitat & nutrients for organisms, soil
When dead, provide excellent firewood and artisan wood



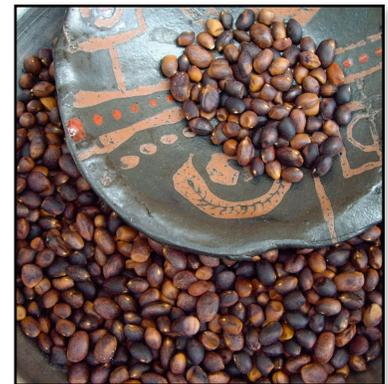
Dry foothills palo verde pods



Carved desert ironwood
chiltepin grinder



Shelling blanched green
foothills palo verde pods



Dry ripe ironwood seeds



Inspected mesquite pods
ready for milling



Desert ironwood flowers



Various velvet and
screwbean mesquite pods

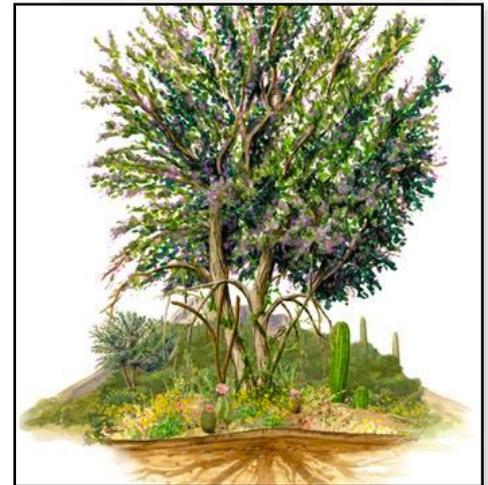
BEAUTIFUL, BOUNTIFUL, BENEFICIAL BEAN TREES

BENEFICIAL BEAN TREES:

Sequester carbon
 Perform oxygen/CO2 exchange
 Enhance desert soils with dropped organic matter
 Add color, beauty, and abundance to landscapes
 Provide habitat for desert creatures
 Anchor native food forest plant communities/guilds
 Provide wood for utilitarian and artisan uses
 Produce pollen and nectar for pollinators
 Provide abundant food for desert people and creatures
 Contain parts with medicinal qualities for healing
 Provide wood for heat and grilling
 Act as nurse trees for saguaros and other native plants
 Enrich desert soils by fixing nitrogen at root zone
 Provide shade and cooling
 Provide structure for other plants to grow into
 Offer nesting and roosting sites for native birds
 Help mitigate flooding damage and erosion
 Evolved with the climate for high heat & drought-tolerance
 Self-mulch, self-prune



Velvet mesquite catkins



Desert ironwood relationships



Saguaro fruit and ironwood pods



Mesquite tree with gourd plant



Saguaro-palo verde forest



Great horned owl roosting in ironwood



Delicious desert foods