

3D Botanical Models by Ken Gilliland

Saguaro Habitat

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Introduction

The Saguaro Habitat is an iconic southwestern American environment perfect for the Songbird ReMix birds and Nature's Wonders creatures. From its towering Giant Saguaro cacti to the wiry sprawl of the Ocotillo and dense gray mesh of the Saltbush, it's a lush desert habitat can be home for Gila woodpeckers, Harris hawks, Black-throated Sparrows, Gila monsters, western fence lizards and figures on horseback in search of desperadoes.

The habitat prop comes in SSS and non-SSS versions for Poser 9+ and 3D Delight and Iray versions for DAZ Studio 4.8+. Also included are standalone props for the Saguaro cactus, Ocotillo, Four-Winged Saltbrush, Rocks and Ground.

How to Care for Your Habitat

Horticultural techniques in Poser

1. Get the planting area ready by installing the product in Poser.
2. Load Poser and go to the Props section. Locate the "Nature's Wonders/Flora/Saguaro Habitat" folder.
3. Select the entire burrow mound or plant you want to plant by clicking the icon.
4. The plants often look their best when given lots of sunlight (100% or more on the main light is recommended.)

Horticultural techniques in DAZ Studio

1. Get the planting area ready by installing the product in DAZ Studio.
2. Load Studio and go to the "Environments" folder in the DAZ Studio section. Locate the "Nature's Wonders/Flora/Saguaro Habitat" folder.
3. Select the entire burrow mound or plant you want to plant by clicking the icon.
4. The plants often look their best when given lots of sunlight (100% on the main light is recommended.)

Physical Based Renderers & Subdivision

Physical based rendering systems such as Iray, Superfly and Octane do not show displacement in the same way that 3D Delight and Firefly do. Physical based renderers require a very high mesh density (heavy subdivision) in order to show displacement while older renderers don't. Unfortunately, achieving good displacement in a physical renderer does require a powerful computer with a lot of memory as well as the patience in waiting on render times. The Iray version included automatically subdivides the "Base" and "Ground Plane" models enough to achieve good displacement, though it may be demanding on your computer. The Superfly version will require you to subdivide the mesh to at least 4 or higher levels and is exceptionally demanding on your system and may often crash Poser 11. I've found subdivision level 4 is the safest and will give you a little displacement.

All maps in this set are 4K (4000 x 4000). The reason for these large maps is to allow close camera positions without pixelating the materials in renders. If memory is an issue, copy the original maps to a back-up location and then resave them at a lower resolution using the same names in the "Runtime : Textures : Notung : SaguaroHabitat" folder.

This model set or it's parts can be subdivided using DAZ Studio 4.8+ or Poser 11+. Some branches and/or leaves will become disconnected with subdivision use. The geometry relies on specific locations for branch and leaf connections and if the branch angles are smoothed by subdivision, it may change it's physical location. Earlier versions of Poser will subdivide some parts correctly and **some incorrectly** due to the way subdivision is calculated in those versions. You can get around this by bringing the model into a modeling program and subdividing it there and then saving it.

Expansion and Individual Part Use

This model set includes individual parts that will allow you to expand the existing main model or they can be used with a scene of your choosing. All three plant types and the five rock shapes, as well as a ground plane, are included as separate parts. In addition, it is possible to change the materials on the five different rock shapes. These models use a common material called "rock", unlike the rocks in the main model, so that any of the five materials (found in the material library) can be applied to them.

About the Biodiversity and the Saguaro

From the US National Park Service

The giant saguaro is the universal symbol of the American west. These majestic plants, found only in a small portion of the United States, are protected by Saguaro National Park, to the east and west of the city of Tucson. Saguaro cacti are host to a great variety of animals. The gilded flicker and Gila woodpecker excavate nest cavities inside the saguaro's pulpy flesh. When a woodpecker abandons a cavity, elf owls, screech owls, purple martins, house finches and black-throated sparrows may move in.

Excavated nests form what is called a "saguaro boot", a hard shell of callus tissue, heavily impregnated with lignin. The saguaro responds to the bird's damaging its tissue by secreting a resinous sap that, over time, hardens into a bark-like shell that prevents the cactus from losing fluid and also protects the nest hole by making it waterproof. The hollowed-out callus whose roughly boot-like shape gives it the name of "saguaro boot."

Large birds, like the Harris's and red-tailed hawks, also use the saguaro for nesting and hunting platforms. Their stick nests are constructed among the arms of a large saguaro. In turn, ravens and great horned owls may take over an abandoned hawk nest.

Saguaro cacti also provide a valuable source of food for animals. In early summer saguaro flowers provide nectar and pollen for bats that in turn pollinate the flowers. The Mexican Long-tongued and the Lesser Long-nosed bats are the two species that pollinate the saguaro at Saguaro National Park. In mid-summer, ripening fruit provides moisture and an energy-rich food for birds, bats, mammals, reptiles and insects during a time of scarcity.

Common wildlife in a Saguaro ecosystem include the coyote, Gambel's quail, and desert tortoise. In drier areas of the Sonoran Desert, pack rats, jackrabbits, mule deer and bighorn sheep will also eat the young saguaro's flesh when other water sources are not available.

Nesting inside Saguaros: [Gila Woodpecker](#), [American Kestrel](#), [Purple Martin](#), [European Starling](#), [Western Screech-Owl](#), [Burrowing Owl](#), [Cactus Wren](#), [Black-throated Sparrow](#), [House Finch](#), [escaped Peach-faced Lovebirds](#).

Use Saguaros for hunting perch/outside nesting: [Red-tailed hawk](#), [Harris Hawk](#), [Harris Hawk](#), [Common Raven](#), [Long-eared Owl](#), [Great Horned Owl](#).

Eat Saguaro Flowers/Pollen/Fruit: [Cactus Wren](#), [Mourning Dove](#), [Anna's Hummingbird](#), [Black-chinned Hummingbird](#), [Broad-billed Hummingbird](#), [Calliope Hummingbird](#), [Costa's Hummingbird](#), [Magnificent Hummingbird](#), [Hooded Oriole](#).

All Birds Found in the Saguaro Habitat: [Turkey Vulture](#), [American Kestrel](#), [Red-tailed hawk](#), [Harris Hawk](#), [Harris Hawk](#), [Gambel's Quail](#), [Mourning Dove](#), [Greater Roadrunner](#), [Anna's](#)

[Hummingbird](#), [Black-chinned Hummingbird](#), [Broad-billed Hummingbird](#), [Calliope Hummingbird](#), [Costa's Hummingbird](#), [Magnificent Hummingbird](#), [Great Horned Owl](#), [Burrowing Owl](#), [Western Screech-Owl](#), [Long-eared Owl](#), [Gila Woodpecker](#), [Vermillion Flycatcher](#), [Purple Martin](#), [Cactus Wren](#), [Curve-billed Thrasher](#), [European Starling](#), [Phainopepla](#), [Northern Cardinal](#), [Pyrrhuloxia](#), [Black-throated Sparrow](#), [Hooded Oriole](#), [House Finch](#).

Other creatures who are found around Saguaros: Bats (flower nectar), Pack Pats, Jackrabbits, Mule deer (eat Saguaro flesh for water content)



Species Name: *Carnegiea gigantea*
Common Name: *Giant Saguaro Cactus*

The Saguaro cactus only grows in the Sonoran desert. It is only considered an adult when it is 125 years old, and saguaros generally die when they're 150-175 years old. A first branch may begin at 50-70 years old, although in areas with little precipitation it may take 100 years before a saguaro grows its first arm. Some saguaro may never grow arms. They are called spears. A saguaro must be 35 years old before it can grow any flowers. It is illegal in Arizona to damage or remove a Saguaro cactus.

Plant Family: Cactaceae

Plant Type: Cacti

Height by Width: up to 70' H

Growth Habit: Upright

Deciduous/Evergreen: Evergreen

Growth Rate: Very Slow

Sun Exposure: Full sun

Soil Preference: Well-draining

Water Requirements: Drought-tolerant

Cold Hardy to: 15 degrees F

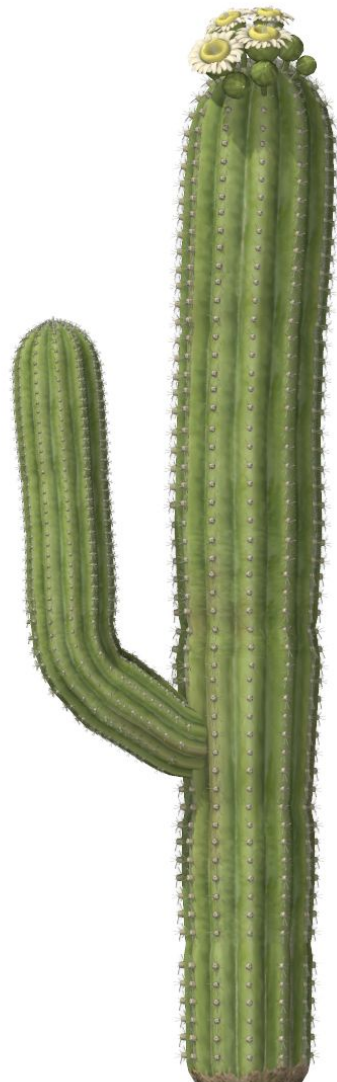
Flower Season: April-June

Flower Color: White

Endangered?: Least Concern; Protected in Arizona

Distribution: Sonoran Desert

Natural Habitat: Dry soils, valleys, slopes



Species Name: *Fouquieria splendens*

Common Name: *Ocotillo*

The plant divides into a multitude of branches at its base and may grow to a height of 10 m (33 ft), with individual stems reaching a diameter of 5 cm (nearly 2 inches) at their base. Each of the branches is pole-like and rarely divides. Specimens in cultivation may not exhibit any secondary branches. The leaf stalks harden into blunt spines, and new leaves sprout from the base of the spine.

The bright crimson flowers appear especially after rainfall in spring, summer, and occasionally fall. Flowers are clustered indeterminately at the tips of each mature stem. Individual flowers are mildly zygomorphic and are pollinated by hummingbirds and native carpenter bees.

Plant Family: Fouquieriaceae

Plant Type: Perennial

Height by Width: 6'-33' H by 6'-20' W

Growth Habit: Erect to outwardly arching or ascending

Deciduous/Evergreen: Summer deciduous

Growth Rate: Moderate

Sun Exposure: Full sun

Soil Preference: Dry, generally rocky soils

Water Requirements: Drought-tolerant

Cold Hardy to: 15 degrees F

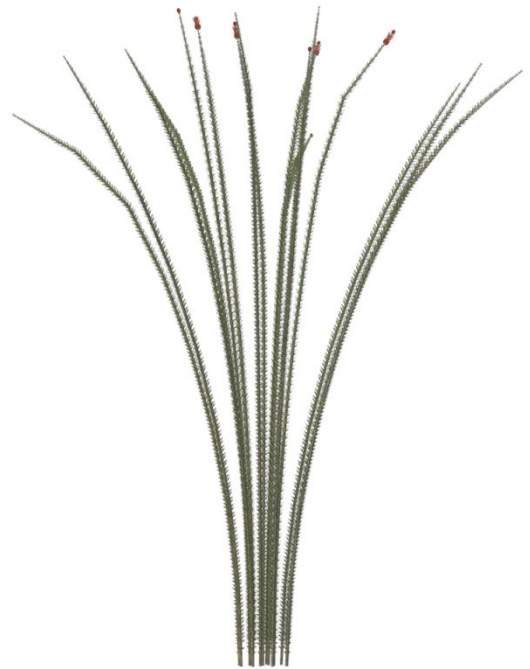
Flower Season: September-October

Flower Color: Crimson

Endangered?: Listed as salvage restricted in Arizona

Distribution: Sonoran Desert and Chihuahuan Desert; California to Texas, central Mexico, Baja California.

Natural Habitat: Dry scrub, deserts < 700 m.



Species Name: *Atriplex canescens*

Common Name: *Four-winged Saltbush*

Highly recommended for erosion control, informal hedge and for wildlife value. Female plants bear seeds that are loved by birds. Unusual yellowish flowers drape down in November. Does well in clay soil.

Plant Family: Chenopodiaceae

Plant Type: Shrub

Height by Width: 4-8' H x 4-8' W

Growth Habit: Dense
branching

Deciduous/Evergreen:
Evergreen

Growth Rate: Fast

Sun Exposure: Full sun

Soil Preference:
Adaptable

Water Requirements:
Drought-tolerant

Cold Hardy to: 15
degrees F

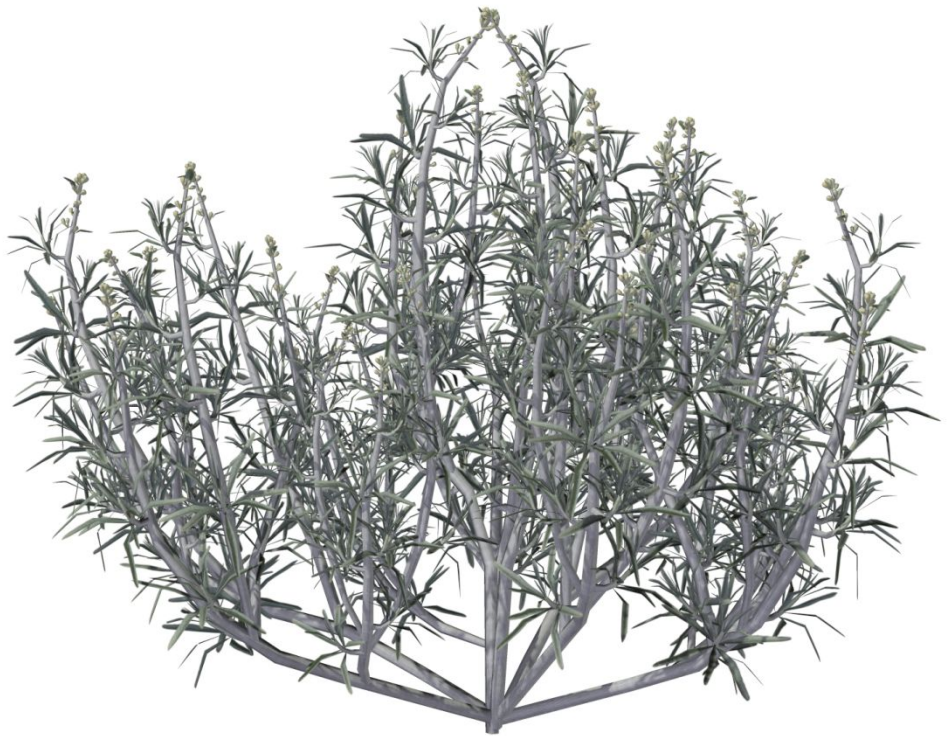
Flower Season: Fall

Flower Color: Yellow-green

Endangered?: Not listed

Distribution: Eastern High Sierra Nevada, Tehachapi, Inner South Coast Ranges, South Coast, North Transverse Ranges, Peninsular Ranges, Great Basin, Deserts

Natural Habitat: Clay to gravelly flats, slopes, shrubland below 5000'



Special Thanks to...

....FlintHawk (my beta tester) and Szark (for his invaluable help with Iray materials settings)

Sources

Wikipedia (<http://www.wikipedia.com>)

US Department of Fish and Wildlife (<https://www.fws.gov/>)

Theodore Payne Foundation for Native California Plants and Wildflowers (<http://theodorepayne.org/>)



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