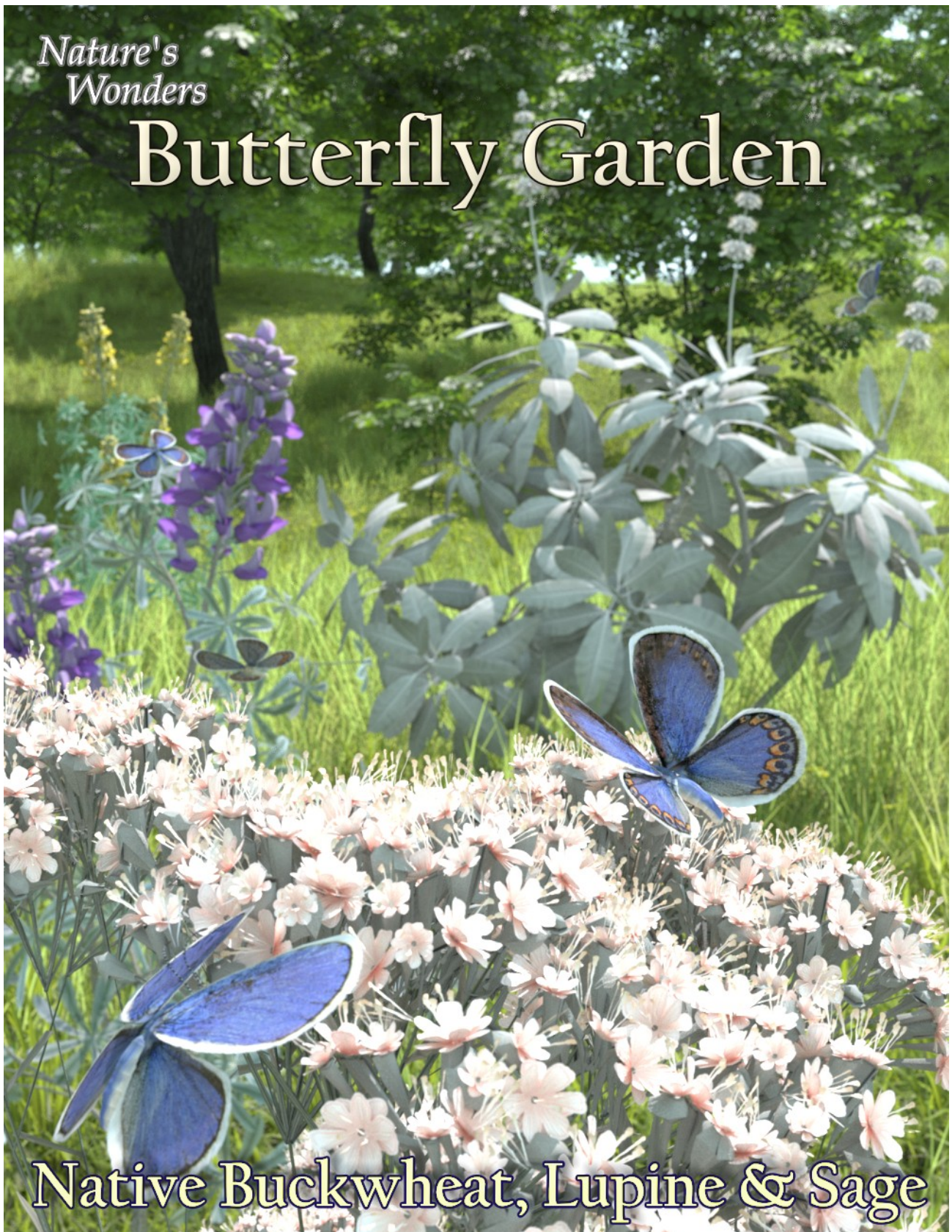


*Nature's
Wonders*

Butterfly Garden



Native Buckwheat, Lupine & Sage

3D Botanical Models by Ken Gilliland

Butterfly Garden

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Introduction

The plant models included in this set are butterfly favorites from the California Floristic Providence. They have been carefully modeled and textured by examining their real-life counterparts from the artist's garden (which includes over 550 different species of native plants). These plants were specifically modeled and textured to hold up to a closer focus for insect/plant renders.

The 3 selected plant species come in several form variations and alternate cultivar texture settings, are in native Poser and DAZ Studio formats, and support Firefly, Superfly, 3Delight and Iray Render Engines.

How to grow and tend your Garden

Horticultural techniques in Poser and DAZ Studio

1. Get the planting area ready by installing the product in Poser and/or DAZ Studio.
2. Locate the "Hummingbird Garden" folder (located in Animals/Natures Wonders/Flora Libraries). In Poser, this is found in the Figures Library.
3. Select the plant you want to plant by clicking the icon.
4. The plants often look their best when given lots of sunlight (100-200% on the main light is recommended).

About the California Floristic Providence

As one of only five areas with a Mediterranean-type climate in the world -- all of which are on the Bio-diversity hotspot list -- the California Floristic Province is characterized by hot, dry summers and cool, wet winters. The region contains a wide variety of ecosystems, including sagebrush steppe, prickly pear shrubland, coastal sage scrub, chaparral, juniper-pine woodland, upper montane-subalpine forest, alpine forest, riparian forest, cypress forests, mixed evergreen forests, Douglas fir forests, sequoia forests, redwood forests, coastal dunes, and salt marshes. Today, about 80,000 square kilometers or 24.7 percent of the original vegetation, remains in more or less pristine condition.

Like other Mediterranean-type ecosystems, the California Floristic Province is distinguished more by the endemism of its plants than its animals. Of nearly 3,500 species of vascular plants in the hotspot, more than 2,120 (61 percent) are found nowhere else in the world. Around 52 plant genera are also endemic.

The high levels of plant species endemism in the California Floristic Province are due to its varied topography, climate zones, geology and soils. The number of vascular plant species found in the California Floristic Province is greater than the total number of species from the central and northeastern United States and adjacent parts of Canada, an area ten times larger than the California hotspot.

Four subregions within the hotspot are centers of exceptionally high plant diversity: the Sierra Nevada, the Transverse Ranges in southern California, the Klamath-Siskiyou region in the coastal mountain ranges of California and Oregon, and the Coast Ranges. The Transverse Ranges, represent a narrow strip that runs east to west in southern California, separating the Coast Ranges to the north from the Peninsular Ranges to the south. The Klamath-Siskiyou region bridges the coastal mountain ranges of California and Oregon, and is home to the most diverse temperate coniferous tree community in the world.

In addition, serpentine soil habitats occur along fault zones in the Central and North Coast and Cascade ranges, from sea level to an elevation of 2,900 meters. Due to specific chemical and physical characteristics of the soils, these habitats are nutrient-poor, and this has led to the establishment of a highly specialized and diverse flora. It has been estimated that serpentine endemic plant species represent 10 percent of the California Floristic Province's endemics.



The hotspot is also home to two spectacular endemic tree species, the giant sequoia (*Sequoiadendron giganteum*) and the coastal redwood (*Sequoia sempervirens*). The giant sequoia, which remains in 75 groves in the Sierra Nevada range, is the most massive species ever to live on Earth, reaching heights of 75 meters and circumferences of 30 meters in the oldest trees. The closely related redwood is often even taller (sometimes reaching 105 meters), although smaller in circumference.

Birds

Although there are less than 10 endemic bird species found in the California Floristic Province, out of a total of more than 340 recorded, more species of birds breed in this region than anywhere else in the United States. There are two Endemic Bird Areas (EBAs), as defined by BirdLife International, in the hotspot. One of these EBAs, Guadalupe Island, is the native range of the Guadalupe junco (*Junco insularis*, CR) and the now extinct Guadalupe caracara (*Polyborus lutosus*) and Guadalupe storm-petrel, the latter last recorded in 1912. The California condor (*Gymnogyps californianus*, CR), the largest North American bird, once ranged across most of the continent; its main stronghold is in this hotspot. Although there were only about 25-35 condors remaining in the 1970s, captive breeding programs have increased the population to more than 100.

Mammals

Of the more than 150 native mammal species in the California Floristic Province, about 20 are endemic to the region. Several large mammal species once found in the hotspot have been extirpated from California since the arrival of European settlers. These include the grizzly bear (*Ursus arctos*), grey wolf (*Canis lupus*), jaguar (*Panthera onca*), and bison (*Bison bison*). Ironically, the grizzly bear appears on the state flag of California and has been the state symbol for more than 150 years. A hunter shot California's last grizzly in 1920. Although there are occasional jaguar sightings reported from southern Arizona, this cat has been driven from most of its U.S. range. The last jaguar in California was shot in Palm Springs in 1860.

Other flagship mammal species occurring in the California Floristic Province are the kit fox (*Vulpes macrotis*), the island fox (*Urocyon littoralis*, CR), the latter with six subspecies confined to the six largest of the eight Channel Islands, the widespread Roosevelt's elk (*Cervus elaphus roosevelti*), and the tule elk (*Cervus elaphus nannodes*), the largest and smallest of the North American subspecies, respectively. The tule elk was on the verge of extinction at the close of the 1800s. Today, habitat protection and breeding programs have helped establish a wild population of more than 1,000 animals.

Reptiles

Four of the hotspot's nearly 70 reptiles are endemic, including two that are found only on Cedros Island, off the Baja California Peninsula: the Cedros Island diamond rattlesnake (*Crotalus exsul*) and Cedros Island horned lizard (*Phrynosoma cerroense*). A number of species have fragmented populations or low population numbers, including the coast-patched nose snake (*Salvadora hexalepis virgultea*), the venomous red-diamond rattlesnake (*Crotalus ruber*), and the western ringneck snake (*Diadophis punctatus*).

Amphibians

The highest levels of endemism in the California Floristic Province are found among amphibians, with over half of the nearly 50 species occurring found only in this hotspot. In general, the area is notable for its high endemism of salamander species. The most diverse genus of salamanders is *Batrachoseps* (nearly endemic to this hotspot), which includes the San Gabriel slender salamander (*B. gabrieli*), recently discovered in mountains in the Los Angeles metropolitan area. Two representatives of the salamander genus *Hydromantes* are endemic to this region. This genus is interesting in that it has an unusually disjunct distribution; its only other members are found within the Mediterranean region of southern Italy and France. Other noteworthy salamander species are the arboreal members of the *Aneides* genus, which ascend to the top of the tallest redwoods, and the endemic California tiger salamander (*Ambystoma californiense*, VU), which has emerged as a major point of contention between conservationists and developers in rapidly growing Sonoma and Santa Barbara counties. The rare arroyo southwestern toad (*Bufo californicus*, EN), a stocky upland toad found in the hotspot, is protected under the U.S. Endangered Species Act.

Freshwater Fishes

The California Floristic Province has a relatively small number of inland fishes (just over 70 species), because of its isolation from the large eastern North American fish fauna by the western mountains and deserts. One of the most interesting groups is a collection of lamprey species, including a cluster of localized landlocked species in the northern mountains.

Invertebrates

The hotspot also has impressive invertebrate diversity. The state of California is home to an estimated 28,000 species of insects, about 9,000 of which are endemic (32 percent). These species represent about 30 percent of all known insects in the United States and Canada.

Human Impacts

The natural ecosystems of the California Floristic Province face serious threats from human activities and development. California's economy would rank it among the top seven countries in the world, and it is the most populated (estimated at 35 million people in 2002) and fastest growing state in the United States. California supplies one-half of all the agricultural products consumed in the United States each year. Direct pressures on ecosystems include urbanization, pollution, and habitat encroachment; expansion of large-scale agriculture; strip mining and oil extraction; invasive alien species; road construction; livestock grazing; logging; increasing use of off-road vehicles; and suppression of natural fires.

Human population pressures have rendered California one of the four most ecologically degraded states in the country, with all or part of the nation's eight most threatened ecosystems represented: beach and

coastal strands, southern California coastal sage scrub, large streams and rivers, California riparian forests and wetlands, California native grasslands, old-growth ponderosa pine forests, cave and karst systems, and the ancient forests of the Pacific Northwest, which include the coastal redwoods.

Native grasslands and vernal pool habitats in the hotspot have been reduced to about one percent of their original extent by the conversion of natural lands to agricultural fields and livestock pasture, urban development, and the invasion of exotic grasses. The magnificent redwood forests, which once occupied 8,000 km along the California coast, have been reduced by intensive logging operations to 15 percent of their original standing area during the last 150 years (although many of these stands have regenerated).

Other seriously threatened ecosystems include wetlands, riparian woodlands and southern maritime sage scrub, which have all been reduced to 10 percent or less of their original area. Wetlands are destroyed by land filling and the diversion of water for agricultural, industrial, and residential development. The reduction in wetlands has been accompanied by a subsequent decline in shellfish, fish, and waterfowl populations that depend on these habitats. Riparian forests face threats from logging, grazing, and development (having been reduced by about 90 percent), while coastal sage scrublands are threatened by housing development, commercial development, and the increasing use of off-road vehicles.

Theodore Payne, Nurseryman

Theodore Payne was born in Northamptonshire, England and served an apprenticeship in horticulture. He came to Los Angeles in 1893 and fell in love with the California flora, dedicating his life to its preservation.

Even in the early years of this century, native vegetation was being lost to agriculture and housing at an alarming rate. He urged the use of California native plants and lectured across the state on preserving the wild flowers and landscapes native to California.

In his own nursery and seed business, which he started in 1903, native wildflowers and landscapes were his specialty. In 1915, he laid out and planted 262 species in a five-acre wild garden in Los Angeles' Exposition Park. He later helped to establish the Blaksley Botanic Garden in Santa Barbara, planted 178 native species in the California Institute of Technology Botanic Garden in Pasadena, helped create the native plant garden at Los Angeles' Descanso Gardens, and advised the Rancho Santa Ana Botanic Garden in Orange County.

By the time he retired in 1958, Payne had made over 400 species of native plants available to the public. The Theodore Payne Foundation (theodorepayne.org) carries on his legacy by propagating and selling California native plants and seeds and teaching classes about the importance of the California Floristic Providence.

Species Name: *Lupinus albifrons*

Common Name: *Silver Bush Lupine*

Attractive bloom and foliage. Silver leaves shimmer beneath long clusters of purple flowers.
Long-lived and reliable. Caution: seeds, leaves and stems are toxic.

Plant Family: Fabaceae

Plant Type: Shrub

Height by Width: 3' H x 5' W

Growth Habit: Dense, spreading

Deciduous/Evergreen: Semi-deciduous

Growth Rate: Fast

Sun Exposure: Full or part sun

Soil Preference: Well-draining, rocky

Water Requirements: Drought-tolerant to occasional

Cold Hardy to: 35 degrees F

Flower Season: Spring

Flower Color: Purple

Endangered?: Not listed

Distribution: Throughout California

Natural Habitat: Open sand or rocks below 6,000'



Species Name: *Lupinus arboreus*

Common Name: *Yellow Tree Lupine*

Beautiful showy lupine. Provides excellent habitat for birds and butterflies near coast. Great accent shrub with color. Caution: seeds, leaves and stems are toxic.

Plant Family: Fabaceae

Plant Type: Shrub

Height by Width: 4-6' H x 4-6' W

Growth Habit: Upright, multibranching

Deciduous/Evergreen: Summer dormant

Growth Rate: Fast

Sun Exposure: Full (coastal) or part sun (inland)

Soil Preference: Well-draining

Water Requirements: Occasional

Cold Hardy to: 35 degrees F

Flower Season: Spring/Summer

Flower Color: Yellow

Endangered?: Not listed

Distribution: North Coast, Central Coast.
Probably native from Sonoma to Ventura Counties.

Natural Habitat: Coastal bluffs, dunes, below 300'



Species Name: *Lupinus stiversii*

Common Name: *Harlequin Lupine*

It prefers disturbed areas and can often be seen colonizing after events such as wildfires or land clearing. It plays a role in soil stabilization and nitrogen fixation, contributing to improved soil fertility. This species is important for local wildlife, offering nectar to pollinators like bees and butterflies. Caution: seeds, leaves and stems are toxic.

Plant Family: Fabaceae

Plant Type: Shrub

Height by Width: 1-3' H x 1-3' W

Growth Habit: Upright

Deciduous/Evergreen: Semi-deciduous

Growth Rate: Fast

Sun Exposure: Full or part sun

Soil Preference: Well-draining, rocky

Water Requirements: Occasional

Cold Hardy to: 35 degrees F

Flower Season: Spring

Flower Color: Bi-colored; Yellow and Purple

Endangered?: Not listed

Distribution: Sierra Nevada and the Great Basin

Natural Habitat: Open grasslands, meadows, and higher elevations



Species Name: *Salvia apiana*

Common Name: *White Sage*

Important Native American ceremonial plant. Flower stalks are tall and arching, up to six feet long. Striking white foliage and beautiful structural form. A local native. Tolerates heavy soil. Bees love it.

Plant Family: Lamiaceae

Plant Type: Perennial

Height by Width: 3-5' H x 4-6' W (flower spike to 6'+)

Growth Habit:

Rounded

Deciduous/Evergreen:

Evergreen

Growth Rate: Fast

Sun Exposure: Full to part sun

Soil Preference:

Adaptable

Water Requirements:

Drought-tolerant to occasional

Cold Hardy to: 15

degrees F

Flower Season:

Spring/Summer

Flower Color: White

Endangered?: Not listed

Distribution: Coastal Southern California to desert margins, Baja

Natural Habitat: Dry slopes in Coastal Sage Scrub, Chaparral, Yellow Pine Forest below 5000'



Species Name: *Eriogonum arborescens*

Common Name: *Santa Cruz Island Buckwheat*

This beautiful, uncommon shrub is easy to grow and looks great year-round with very little maintenance. Popular with butterflies, especially hairstreaks and blue butterflies. Grows well in clay soil. Excellent for erosion control.

Plant Family: Polygonaceae

Plant Type: Shrub

Height by Width: 3' H x 5' W

Growth Habit: Compact.
mounding

Deciduous/Evergreen:
Evergreen

Growth Rate: Fast

Sun Exposure: Full sun

Soil Preference: Adaptable

Water Requirements:
Drought-tolerant to moderate

Cold Hardy to: 10 degrees F

Flower Season:
Summer/Winter

Flower Color: Light Pink (in
summer) changing to Rust (in
late summer)

Endangered?: Not listed

Distribution: Northern Channel Islands except San Miguel Island

Natural Habitat: Dry slopes



Special Thanks to...

....my beta team, Alisa and FlintHawk

Sources

- Conservation International (<http://www.biodiversityhotspots.org>)
- Theodore Payne Foundation for California Native Plants & Wildflowers (<http://www.theodorepayne.org>)
- Quail Hollow (Home of Ken and Rhonda Gilliland) (<http://www.songbirdremix.com>)

'The rapidity with which the wildflowers are decreasing is most damning. If we do not begin to preserve them, the time will come when they will become extinct and live only in history. -Theodore Payne, 1916



Theodore Payne (1872-1963)

Shirts, jerseys, sweatshirts, prints, cards, posters, pillows, coffee cups, calendars & more

The image displays a variety of bird-themed merchandise. At the top left is a white long-sleeved shirt with a grid of small bird illustrations and the text "Birds of Hawaii Island". To its right is a white t-shirt with a large illustration of a pelican and the text "Pelicans of the World". Below these is a framed print of birds in flight. In the center is a white t-shirt with a parrot wearing a graduation cap, surrounded by mathematical formulas like $E=mc^2$, $A+B=P$, and $s-q$, with the text "Songbird ReMix" and "BIRD BRAINS" at the bottom. To the left of this t-shirt is a white mug featuring a yellow bird. To the right is a calendar for January 2010 showing King penguins. At the bottom center is a sign that reads "NO MINORS ALLOWED ON PREMISES" with a small bird illustration. The text "Songbird ReMix" is prominently displayed in large, bold letters at the bottom right.

Songbird ReMix

www.empken.com/store