



CA-24 Species Accounts

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MAMMALS

Mountain Lion (*Puma concolor*)

Mountain lions are generalist carnivores that will eat most small animals, although deer make up 60-80% of their diets. They are the largest cat still found in California (males weigh up to 200lbs) and they can live in every California habitat from the coast to 14,000 ft in elevation. Mountain lions have the largest home ranges of any terrestrial mammal with males ranging from 100-200 sq miles.

Size: Females weigh between 70-145 lbs and males weigh between 80-200 lbs.

Diet: Generalist carnivore with deer making up 60-80% of the diet in North America.

Habitat: Live in most habitats from sea level to 14,000 ft in elevation.

Behavior: Largest home range of any land mammal with females ranging from 40-80 sq miles and males ranging from 100-200 sq miles.

Lifespan: 6-13y in the wild and 15y in captivity.

Did you know fact: Mountain lions are not true “lions” and are the only species in their genus, *Puma*. They are the biggest cat remaining in California and most of North America.

IUCN status: Least Concern.

Primary Source: Bay Area Puma Project.

California Black Bear (*Ursus americanus californiensis*)

Black Bears are opportunistic omnivores that occur in a diversity of habitats, preferring biodiverse forests. They can kill vertebrate prey as large as deer, but most of their diet is composed of plants (grasses, nuts, berries) and insects. Adults vary substantially in size from 85 lbs for a small female to 900 lbs for a large male. Despite their name, Black Bears have variable colors from white to brown to black and are most often described as “cinnamon” color in California. If you see a bear in California, it is a Black Bear; they are the only bear species that currently exists in the state.

Size: Males are 100-900 lbs and females are 85-520 lbs.

Diet: Omnivorous and opportunistic. Although they can kill vertebrate prey as large as deer, they primarily eat plants and insects.

Habitat: Varies seasonally. Typically prefer diverse deciduous and coniferous forests with a combination of forest, edge, and riparian habitat. Often found at high elevation.

Behavior: Most active near dawn and dusk (i.e. crepuscular) and highly adaptable, changing their habitats and diets with the seasons.

Lifespan: 10-30y in the wild. Maturity at 2-5y.

Did you know fact: Black bears come in a diversity of colors from white to brown to black. In CA, they are often “cinnamon”. Regardless of color, Black Bears can be distinguished from Brown Bears because they are missing the “hump” characteristic of Brown Bears.

IUCN Status: Least Concern.

Primary Source: Animal Diversity Web.

Island Fox (*Urocyon littoralis*)

Island Foxes are a small species of fox only found on California's Channel Islands. Adults weigh 2.5-6lbs. Island Fox are omnivores that predominantly eat insects but also eat mice, small reptiles, and fruit. They can be active day and night, and both sexes are territorial. Despite their small size, Island Foxes are top predators on the Channel Islands and function as "keystone species" having an outsized impact on their community structure.

Size: 2.5-6 lbs with males being slightly larger than females.

Diet: Omnivores that largely eat insects along with some mice, small reptiles, and fruit.

Habitat: 6 of the 8 Channel Islands off the coast of California and nowhere else.

Behavior: Can be active day and night. Highly territorial with both males and females protecting territories that can overlap.

Lifespan: Up to 10y although 4-6y is more typical.

Did you know fact: Despite their small size, Island Foxes are top predators that have outsized impacts on the structure of Channel Island ecosystems making them a "keystone species".

IUCN Status: Near threatened.

Primary Source: Friends of the Island Fox.

Southern Sea Otter (*Enhydra lutris nereis*)

Sea otters are the smallest marine mammal with females averaging 46 lbs and males averaging 64 lbs. The Southern Sea Otter subspecies only occurs along the central coast of California. Sea otters have high energy demands to stay warm in the cold waters of the Pacific Ocean. To meet these demands, they eat the equivalent of 25% of their bodyweight in bottom-dwelling invertebrates such as sea urchins and crabs daily. They eat so much that they protect kelp forest and sea grass ecosystems which are otherwise destroyed by overabundant marine invertebrates, especially sea urchins. This makes sea otters important "keystone species" for the sea grass beds and kelp forests iconic to the California coastline.

Size: Adult females average 46 lbs and adult males average 64 lbs.

Diet: Bottom-dwelling invertebrates such as clams, crabs, sea urchins, and snails. Must consume food equivalent to 25% of their body mass each day to meet their energy needs.

Habitat: Marine coastal areas along the Central California coastline, especially kelp forests and estuaries.

Behavior: Sea otters use rocks as tools to break open hard-shelled prey. They are also social and can be observed resting in groups, often wrapping themselves in kelp or seagrass to keep from drifting while at rest.

Lifespan: 10-18y in the wild with males typically having a shorter lifespan than females.

Did you know fact: Sea Otters function as a "keystone species" in kelp forests. The otters eat invertebrates such as sea urchins that will clear-cut the kelp if left unchecked.

IUCN Status: Endangered.

Primary Source: US Fish and Wildlife Service (FWS Focus).

Riparian Brush Rabbit (*Sylvilagus bachmani riparius*)

The Riparian Brush Rabbit is a small cottontail rabbit (12-in long and 1.5 lbs) and one of 8 subspecies of brush rabbit native to California. As their name suggests, Riparian Brush Rabbits occur along rivers, particularly in oak woodland. They forage on herbaceous plants, typically at the edge of clearings. Although their native range once encompassed the entire central valley north of Fresno, only three small populations remain. The most-immediate threat to Riparian Brush Rabbits is a virus fatal to rabbits that recently emerged in the western United States. In collaboration with state and federal agencies, Oakland Zoo successfully tested a vaccine for this virus in Riparian Brush Rabbits. Since then, partners have vaccinated hundreds of rabbits against this disease, potentially saving the Riparian Brush Rabbit from extinction.

Size: Adults are approx. 1- in long and weigh 1.5 lbs.

Diet: Native and non-native grasses and herbs found along the edge of forest clearings.

Habitat: Along rivers in San Joaquin and Stanislaus County, California. Only three small populations remain.

Behavior: Can be active year-round and at all hours of the day, but they are secretive. They are better climbers than most rabbits (although still not great), which helps them escape floods in their riparian habitats.

Lifespan: 3 years

Did you know fact: The greatest current threat to Riparian Brush Rabbits is a virus fatal to rabbits that recently emerged in the western US. Oakland Zoo collaborated with state and federal agencies to test a vaccine which is now being used to vaccinate wild rabbits against this disease, with hundreds vaccinated thus far.

IUCN Status: NA (US and California Endangered).

Primary Source: US Fish and Wildlife Service (FWS Focus).

Pallid Bat (*Antrozous pallidus*)

Pallid Bats are moderate sized “microbats” at 2-3 inches from head to tail and 0.6-1 ounce in weight. They are omnivores that eat both insects and cactus flowers and fruits. This diet allows them to function both for pest control and as a pollinator species, particularly for columnar cacti. Pallid bats are found throughout the western US especially in desert habitats. They are highly social, forming roosts of 12-100 bats. Pallid bats use vocalizations to socialize and live 9y or more. Although Pallid Bats can use their vocalizations to echolocate prey in flight, they specialize in flying low to the ground and passively listening for prey which they capture and consume on the ground. Scorpions are a favorite prey, and Pallid Bats are resistant to scorpion venom. These amazing adaptations are why the Pallid Bat was named State Bat of California in 2023.

Size: 2-3 inches long and weigh 0.6-1 ounce.

Diet: Insects and occasional cactus flowers and fruits. Unlike most insectivorous bats, they tend to fly low and capture prey on the ground.

Habitat: Desert habitats throughout western North America.

Behavior: Highly social, forming roosting colonies of 12-100 bats. They use a variety of structures for roosting including caves, hollow trees, rock crevices, buildings, or even piles of rock or burlap sacks. They use vocalizations both for socializing and echolocation.

Lifespan: Average 9y in the wild and 11y in captivity.

Did you know fact: Pallid Bats were named the State Bat of California in 2023. They also are highly tolerant of scorpion venom, allowing them to eat scorpions without harm.

IUCN Status: Least concern.

Primary Source: Animal Diversity Web.

Giant Kangaroo Rat (*Dipodomys ingens*)

Giant Kangaroo Rats are a communal species of rodent native to San Joaquin Desert habitats on the west side of the San Joaquin Valley and associated foothills. Their name is a bit misleading. Kangaroo Rats are neither kangaroos nor rats, but a distinct group of rodents that hop on their hindlimbs. Although larger than other Kangaroo Rats, “Giant” is also a stretch because these animals are about the size of a large hamster, weighing 3.5-6.7 ounces. Giant Kangaroo Rats are nocturnal and primarily eat seeds, collecting large seed stockpiles that they store underground for winter. Giant Kangaroo Rats are important “ecosystem engineers”. They develop large communal burrow systems called “precincts” that are visible from airplanes. These burrow systems create shelters for other desert animals and till the soil creating opportunities for native plants. Giant Kangaroo Rats also control non-native grasses that have come to dominate the western San Joaquin Valley.

Size: 12-13 inches total length; 3.5-6.7 ounces

Diet: Primarily eat seeds but will also eat green plants and insects.

Habitat: Remnant San Joaquin Desert habitat on the west side of the San Joaquin Valley and associated foothills

Behavior: Giant Kangaroo Rats are “ecosystem engineers” for the San Joaquin Desert. They develop large communal burrow systems called “precincts” visible from airplanes above. These burrow systems create shelters for other desert animals and till the soil creating opportunities for plants.

Lifespan: Average lifespan is thought to be 2y.

Did you know fact: Kangaroo Rats are neither rats nor kangaroos. They are a distinct group of rodents that hop on their hindlimbs. “Giant” is also a stretch. Although larger than most kangaroo rats, Giant Kangaroo Rats are only the size of a large domestic hamster.

IUCN Status: Endangered

Primary Source: US Fish and Wildlife Service (FWS Focus)

Gray Wolf (*Canis lupus*)

Gray Wolves are the largest living species of canid (i.e. dogs and their relatives) with adults ranging from 50-176 lbs. Males are larger than females and more-northern populations tend to be larger than more-southern populations. Gray Wolves occupy almost all terrestrial habitats and have one of the largest natural ranges of any animal, encompassing the entire northern hemisphere. Gray Wolves were lost from California in the 1920's along with other predators such as California Grizzly Bear but returned in 2011 when a lone animal entered the state from Oregon. Since then, the Lassen Pack has made northern California their home and in 2023 a brand-new pack of 5 animals (1 adult female and 4 cubs) was documented in Sequoia National Forest outside Tulare.

Size: Largest living species of canid (i.e. dogs and their relatives). Adults weight 50-176 lbs with males larger than females and more-northern populations generally larger than more-southern populations.

Diet: Carnivore. Diet is variable and depends on prey availability. Lone wolves tend to take smaller prey whereas packs will tackle larger prey.

Habitat: Varied. Gray Wolves are one of the most wide-ranging land animals. Their original range encompassed most of the northern hemisphere.

Behavior: Highly social pack animals. Most packs consist of 5-9 animals but can be as large as 36 animals. Wolves primarily howl to communicate with one another. "Howling at the moon" is most likely wolves working together to hunt when they have more light during a full moon.

Lifespan: Average 5y in the wild but can live to 15y.

Did you know fact: Although native to California, Gray Wolves were lost from the state in the 1920's along with the California Grizzly Bear. In 2011, the first wild wolf entered California from Oregon in nearly a century. Since then, the Lassen Pack has made northern California their home and in 2023 a brand-new pack of 5 animals (1 adult female and 4 cubs) was documented in Sequoia National Forest outside Tulare.

IUCN Status: Least Concern.

Primary Source: Animal Diversity Web and California Department of Fish and Wildlife.

BIRDS

Spotted Owl (*Strix occidentalis*)

Spotted Owls are large owls (1-1.5 lbs, 18 in. long) that occur in mature, old-growth forests in western North America. Two subspecies occur in California with the Northern Spotted Owl occurring from northern California to British Columbia and the California Spotted Owl occurring further south. These owls require old-growth forests that have complex, multi-layered canopies. They are agile fliers adept at hunting small mammals in forests at night, and they use hollows in ancient trees for nesting. Their primary threats are habitat loss and competition from larger, more aggressive, Barred Owls, which have expanded their range into the northwest and outcompete Spotted Owls, especially in disturbed habitats.

Size: Adults weigh 1-1.5lbs and are approx. 18in long.

Diet: Small and medium sized mammals, mainly rodents.

Habitat: Mature, old-growth forests with complex, multi-layered canopies.

Behavior: Agile and maneuverable fliers adapted to hunting in forests at night. Although primarily solitary, they form long-term monogamous pair bonds and will occur in overlapping home-ranges year-round.

Did you know fact: Two subspecies occur in California. The California Spotted Owl (*S. occidentalis occidentalis*) only occurs in California and can be found in coastal southern California and the southern Sierra Nevada. The Northern Spotted Owl (*S. occidentalis caurina*) occurs in Northern California and extends north along the coastal ranges into British Columbia. The California subspecies is paler in color and has larger spots.

IUCN Status: Near Threatened.

Primary Source: All About Birds – Cornell Lab.

California Condor (*Gymnogyps californianus*)

California Condors are the largest flying birds in North America with adults weighing 15-22 lbs and having a 9-ft wingspan. They eat carrion from land and marine mammals. California Condors are built to soar and can travel hundreds of miles in a single flight when searching for carrion. In 1982, only 22 California Condors remained in the world. All 22 were brought into captivity for a multi-organization captive breeding effort to save the species. Both Los Angeles Zoo and the San Diego Zoo contributed to this breeding effort. Today the wild population has grown to over 300 birds. However, avian influenza and lead poisoning are ongoing challenges to long-term recovery in the wild.

Size: Largest birds in North America. Adults weigh 15-25 lbs and have a 9-ft wingspan.

Diet: Carrion from land and marine mammals.

Habitat: Mountain regions of southern and central California, Arizona, Utah, and Baja California.

Behavior: Will soar for hours at a time looking for carrion and can cover hundreds of miles in a single flight. They are social at feeding and roosting sites and recognize one another. Pairs are monogamous and will stay together throughout the year as well as share nesting duties.

Did you know fact: In 1982, only 22 California Condors remained in the world. By 1987, all 22 were brought into captivity for a multi- organization captive breeding effort to save the species. Both Los Angeles Zoo and the San Diego Zoo contributed to this breeding effort. Today the wild population has grown to over 300 birds. However, avian influenza and lead poisoning are ongoing challenges to long-term recovery.

IUCN Status: Critically Endangered.

Primary Source: All About Birds – Cornell Lab.

REPTILES

Desert Tortoise (*Gopherus agassizii*)

Desert Tortoises are medium-sized tortoises native to the Mojave Desert in California, Nevada, Utah, and Arizona. Adults weigh 8-15lbs and have shells 8-15-in. long. Desert Tortoises are “Ecosystem Engineers” that dig large burrows which provide shelter for many animal species and turns the soil creating habitat for native plants. Desert Tortoises spend up to 95% of their time in these burrows and rely on them to escape extreme temperatures in both summer and winter. Desert Tortoises have a slow life cycle, requiring 13-20 years to reach maturity and living 80 years or more. This slow life cycle allows Desert Tortoises to take advantage of occasional “good years” for reproduction but also means that they have difficulty recovering from increases in mortality arising from road-deaths or novel predators.

Size: Adults weigh 8-15 lbs and have shells 8-15-in. long.

Diet: Herbivorous. Eat a variety of grasses, herbs, cacti, and wildflowers.

Habitat: Most habitats within the Mojave Desert. Do best in areas with high plant diversity.

Behavior: Gopher tortoises dig large burrows for protection from extreme temperatures in summer and winter and will spend as much as 95% of their lives in these burrows. Numerous desert animals also rely on these burrows for shelter. Burrowing also turns the soil improving habitat for native plants. These behaviors make Desert Tortoises important “Ecosystem Engineers” for the Mojave Desert.

Did you know fact: Desert Tortoises can live over 80y and take up to 20y to reach maturity in the wild. Tortoises are a family of terrestrial turtles characterized by elephant-like feet. So, all tortoises are turtles but not all turtles are tortoises!

IUCN Status: Critically Endangered.

Primary Source(s): US Fish and Wildlife Service (FWS Focus) and The Nature Conservancy.

Pacific Leatherback Sea Turtle (*Dermochelys coriacea*)

Leatherback Sea Turtles are the largest turtles in the world, with adults commonly weighing 750-1000lbs and up to 2000lbs (the size of a small car!). They are also the widest-ranging reptile, occurring in both temperate and tropical waters of the Atlantic, Indian, and Pacific Oceans, the farthest migrating reptile with some traveling 10,000 miles between foraging and nesting grounds annually, and the deepest diving reptile with dives up to 4000 ft lasting up to 85min. Despite their large size, they eat relatively small and soft-bodied prey, primarily open-ocean jellies. Leatherbacks only leave the water when females come on land to nest on sandy beaches in the tropics. The Pacific Leatherback is the most endangered population of Leatherbacks and occurs along the coast of California where they can be observed foraging in Monterrey Bay and off the coast of San Francisco.

Size: 750-1000lbs typical, but up to 2000lbs observed. Largest turtle in the world!

Diet: Jellies and other soft-bodied open ocean prey.

Habitat: Leatherbacks occur in the Pacific, Indian, and Atlantic Oceans and have the widest global distribution of any reptile. They are strong swimmers and highly migratory, with some swimming over 10,000 miles per year between nesting and foraging grounds. Leatherbacks have been observed foraging along the entire coastline of California, with the majority of observations off of San Francisco and Monterrey Bay.

Behavior: Spend most of their lives in the open ocean. In addition to being strong swimmers, Leatherbacks can dive to depths of 4000ft, deeper than any other turtle, and can stay underwater for up to 85 minutes. However, females must come on land to lay their eggs, nesting at night on tropical and subtropical beaches.

Did you know fact: In addition to being the largest and most wide-ranging turtle, Pacific Leatherbacks are the State Marine Reptile of California. They are called “leatherbacks” because the outer layer of their dorsal shell (carapace) is covered in a leathery skin rather than hard, bony plates.

IUCN Status: Vulnerable

Primary Source(s): NOAA Fisheries

San Francisco Garter Snake (*Thamnophis sirtalis tetrataenia*)

San Francisco Garter Snakes are brightly colored, medium sized snakes, considered by many to be the most beautiful snake in North America. They have red heads as well as distinct yellow, black, and red stripes running the length of the body. Adults range from 3-4 ft in length with females being larger than males. Females give live-birth and being larger allows them to carry more young. This subspecies only occurs on the San Francisco Peninsula within ~10 small, disjunct populations separated by the intensely urban environment of San Francisco. San Francisco Garter Snakes are good swimmers and forage in shallow fresh water, primarily eating Pacific Tree Frogs and Red-legged Frogs. They must also access grassland habitat which they use for thermoregulation and shelter. Although they do not have a dangerous bite, they can become poisonous to predators by eating toxic newts and maintaining the newt’s toxins within their own bodies.

Size: Adults are 3-4 ft in length with females being larger than males.

Diet: Primarily eat Pacific Tree Frogs and California Red-legged Frogs (also endangered), but will eat a variety of small animals associated with freshwater including immature newts, toads, fish, worms, and rodents.

Habitat: Require both aquatic (freshwater) and upland habitat. Forage in shallow water of marshes and streams and use upland grasslands for thermoregulation and shelter.

Behavior: Good swimmers that are active during the day. Typically retreat to water when threatened and will smear a smelly musk from their cloaca on attackers when captured. Females carry offspring to term and give live birth.

Did you know fact: Considered by many to be the most beautiful snake in North America. They are only found on the San Francisco Peninsula within ~10 disjunct populations separated by intensely urban environments.

IUCN Status: NA (US and California Endangered)

Primary Source(s): US Fish and Wildlife Service (FWS Focus) and California Herps

Blunt-nosed Leopard Lizard (*Gambelia sila*)

Blunt-nosed Leopard Lizards are medium-large lizards (12" in total length) that only occur in remnant San Joaquin Desert habitat within California's San Joaquin Valley and surrounding foothills. They are sit-and-wait predators that primarily eat insects. They rely on burrows, often dug by rodents such as the Giant Kangaroo Rats, to avoid extreme temperatures in the summer and winter and to avoid predators. Each breeding season (April-July), females develop bright orange spots on their sides and males develop a pinkish-orange "wash" covering their underside and legs. They are short-lived in the wild (1-2y) but can live 5y or more in captivity. Despite being listed on the inaugural US Endangered Species List in 1967, their populations have continued to decline. In 2020, the Fresno Chaffee Zoo developed a captive breeding program that has produced over 100 offspring and began releasing animals back to the wild in 2023.

Size: Adults are up to 12-inches in length and weigh 1.5-2 oz. Males are typically larger than females.

Diet: Insects and other arthropods, with grasshoppers being the most common prey item.

Habitat: Open and patchy vegetated areas within San Joaquin Desert habitat in the San Joaquin Valley and surrounding foothills. They thrive in habitats with a patchwork of shrubs and forbs separated by bare ground.

Behavior: Sit-and-wait predators that are primarily active from May-July in late morning. They rely on burrows, such as those dug by the Giant Kangaroo Rat, to provide shelter from extreme temperatures and spend up to 75% of their lives underground.

Did you know fact: Each breeding season, females develop bright orange spots on their sides and males develop a pinkish-orange "wash" covering their underside and legs. These lizards are only found in California's San Joaquin Valley and were listed on the inaugural US Endangered Species list in 1967. The Fresno Chaffee Zoo developed a captive breeding program beginning in 2020 that has produced over 100 offspring with many released back to the wild.

IUCN Status: Endangered.

Primary Source(s): USFWS Species Status Assessment.

AMPHIBIANS

Southern Mountain Yellow-legged Frog (*Rana muscosa*)

Southern Mountain Yellow-legged Frogs are medium-sized true frogs that occur in high-elevation (4500-12000 ft) streams, lakes, and marshes. They are endemic to California and only occur in small populations within the Southern Sierra Nevada Mountains and Transverse Ranges. These frogs are highly aquatic, with adults mostly leaving the water to bask on open land within a few feet of the water. Adults primarily eat insects in or near the water whereas tadpoles eat algae. Their primary threats include a fungal disease (Chytridiomycosis) that has decimated many species of frogs worldwide, and the introduction of predatory sportfish that eat their tadpoles before they can develop. Multiple zoos and aquariums in California are partnering with state and federal agencies to breed and rewild Southern Mountain Yellow-legged Frogs, and reintroductions began in 2010.

Size: Adults are 1.5-3.75 inches long with females being slightly larger.

Diet: Adults primarily eat insects while tadpoles eat algae.

Habitat: Adults are mostly aquatic, and tadpoles are fully aquatic. They live in high-elevation lakes, marshes, and streams from 4500-12000 ft in elevation within the southern Sierra Nevada Mountains and Transverse Ranges.

Behavior: Like most frogs, males call during the breeding season, however it tends to be quiet because they primarily call underwater.

Did you know fact: Multiple zoos and aquariums in California are partnering with state and federal agencies to breed and rewild Southern Mountain Yellow-legged Frogs. Their primary threats include a fungal disease (Chytridiomycosis) that has decimated many species of frogs worldwide and the introduction of predatory fish.

IUCN Status: Endangered.

Primary Source(s): US Fish and Wildlife Service (FWS Focus) and CaliforniaHerps.com.

California Tiger Salamander (*Ambystoma californiense*)

California Tiger Salamanders are large-bodied salamanders (6-9.5 inches long) found only in central California (i.e. endemic). They are black bodied with random white or yellow blotches, and they can live 10-15 years in the wild. These salamanders use both aquatic and terrestrial habitats during their lives. They specialize in using vernal (i.e. temporary) pools for reproduction, migrating to these pools from upland burrows when rains arrive each winter. The larvae are aquatic and require pools to persist for at least 12 weeks so that they can fully develop. Both larvae and adults are opportunistic predators that eat a variety of small arthropods and the tadpoles of other amphibians. One of their greatest threats comes from invasive Barred Salamanders which were introduced to California as fishing bait. The Barred Salamander can outcompete, predate, and hybridize with native California Tiger Salamanders.

Size: Adults are 6-9.5 inches long

Diet: Opportunistic predators with adults eating arthropods and tadpoles of other amphibians.

Habitat: Use both aquatic and upland terrestrial habitats throughout their lives. To reproduce, they require pools lasting at least 12 weeks to provide time for larvae to metamorphose. Adults require uplands with access to rodent burrows which they use for refuge during the heat of summer.

Behavior: California Tiger Salamanders make large migrations when the winter rains come each year to access temporary (i.e. vernal) pools for reproduction.

Did you know fact: California Tiger Salamanders typically live 10-15 years in the wild. One of their greatest threats comes from invasive Barred Salamanders which were introduced to California as fishing bait. The Barred Salamander can outcompete, predate, and hybridize with native California Tiger Salamanders.

IUCN Status: Vulnerable

Primary Source(s): US Fish and Wildlife Service (FWS Focus) and CaliforniaHerps.com

FISH

Giant Black Sea Bass (*Stereolepis gigas*)

Giant Black Sea Bass are huge fish, historically reaching lengths of 8.5ft and weighing more than 550 lbs. They only occur in coastal marine waters off California and the Baja peninsula where they frequent kelp forests and rocky reefs. Juveniles are bright orange with black spots whereas adults are greyish black with a light underside and faint spots. These fish are ambush predators that primarily eat bottom-dwelling invertebrates such as crabs and lobster but will also eat fish. To capture prey, they rapidly open their large mouths to create a vacuum and suck in the unsuspecting prey. Giant Black Sea Bass can live 75-100 years and they became endangered largely due to overfishing. In 2020, a collaborative effort between the Aquarium of the Pacific, Cabrillo Aquarium, and CSU Northridge began releasing captive-reared fish back to the wild.

Size: Adults historically reached lengths of 8.5 ft and weighed 560 lbs.

Diet: Primarily eat benthic invertebrates such as crabs and lobsters but will also eat fish.

Habitat: Coastal waters off California and the Baja peninsula typically with sandy or rocky bottoms and kelp beds.

Behavior: Ambush predators that typically move slowly among kelp beds or rocky reefs. To capture prey, they rapidly open their large mouths to create a vacuum and suck prey in.

Did you know fact: The Aquarium of the Pacific, Cabrillo Aquarium, and CSU Northridge began releasing captive-reared Giant Black Sea Bass to the wild in 2020.

IUCN Status: Critically Endangered

Primary Source(s): Animal Diversity Web

California Golden Trout (*Oncorhynchus mykiss aquabonita*)

California Golden Trout are small-to-medium sized (average 7.5 in), brightly colored relatives of rainbow trout. Their entire native habitat comprises two stream systems on the eastern slope of the southern Sierra Nevada mountains above 6800 ft in elevation, where they can be found in cool, slow moving streams or lakes feeding on aquatic insects. They are the only predatory fish species naturally occurring in their habitat. As a result of this historical isolation, they display low aggression and are outcompeted by non-native sport fish such as rainbow trout and brown trout when introductions cause them to co-occur.

Size: 7.5 inches long.

Diet: aquatic insects.

Habitat: Slow moving mountain streams and lakes above 6800ft elevation. Their entire range comprises two stream systems on the eastern slope of the southern Sierra Nevada.

Behavior: Day-active social trout that will school and forage on insects near the water surface. Their behavior is similar to their close relative, the rainbow trout, but they are less aggressive and typically outcompeted by rainbow trout when they cooccur.

Did you know fact: California Golden Trout were the only non-herbivorous fish occurring in their native habitat prior to the introduction of sport fish by humans. This history of isolation resulted in California Golden Trout displaying little aggression and being easily outcompeted by invasive fish.

IUCN Status: NA (California Endangered and US Threatened).

Primary Source(s): California Department of Fish and Wildlife and Animal Diversity Web.

INVERTEBRATES

Monarch Butterfly (*Danaus plexippus*)

Monarch Butterflies are iconic insects found throughout North America. They can occur in almost any habitat that includes milkweed plants, which are necessary for both egg laying and food for the caterpillars. Both life-stages are brightly colored which warns predators that they are toxic. Monarchs do not produce their own toxins but instead obtain them from their milkweed food. During the spring and summer months, adults only live 2-5 wks which allows multiple generations within a single active season. However, when the weather cools in the Fall, adult Monarchs stop reproducing and begin extended migrations to their overwintering sites, sometimes flying 2000 miles over 1-2 months. Eastern populations of Monarch overwinter in the mountains of central Mexico whereas western populations overwinter along the Pacific coast of California. At overwintering sites, Monarchs densely congregate within the branches of trees.

Size: Adults have a 3-4 inch wingspan and caterpillars are 2 inches long

Diet: Monarchs require milkweed plants for egg laying and food for caterpillars. Adults eat nectar from a variety of flowers.

Habitat: During the warm months, Monarchs occur in most North American habitats that include milkweed and flowering plants. Monarchs from eastern North America overwinter within trees in montane central Mexico whereas those from western North America overwinter in trees along the Pacific Coast of California.

Behavior: Each fall, Monarchs stop reproducing and migrate to overwintering sites, flying up to 2000 miles and requiring up to two months. After winter, they fly back and begin reproducing again. Multiple generations are born, reproduce, and die during the active season until Fall returns and a new generation migrates.

Did you know fact: The bright colors of Monarch butterflies and their caterpillars warn predators that they are toxic. However, they can't produce toxins; instead they become toxic because of the milkweed eaten by the caterpillars.

IUCN Status: Least concern.

Primary Source(s): US Fish and Wildlife Service (FWS Focus).

Franklin's Bumble Bee (*Bombus franklini*)

Franklin's Bumble Bee only occurs in Northern California and Southern Oregon between the Pacific Ocean and Northern Sierra Nevada mountains. They are large bumble bees with 0.5-1-inch-long bodies. They can be distinguished from other bumble bees by the characteristic U-shaped yellow patch on their thorax contrasting an otherwise black body. They eat pollen and nectar, and require access to blooming flowers continuously from spring through fall. Like other bumble bees, they form colonies for part of the year and are solitary for the remainder. Each spring, solitary queens found colonies upon emergence from hibernation, typically within a rodent burrow. Colonies grow from the eggs of the founding queen until they have 50-400 worker

bees. Near the end of the year, the colony produces new queens which overwinter and restart the cycle. Franklin's Bumble Bee is extremely rare and was last observed in the wild in 2006.

Size: large bumble bee with lengths from 0.5-1 inch.

Diet: Pollen from a wide variety of flowering plants. Continuous access to flowers and pollen is required from spring through fall.

Habitat: Meadows and other habitats with diverse flowering plants in Northern California and Southern Oregon. Smallest natural range of any North American Bumble Bee.

Behavior: Similar to other bumble bees, they form colonies for part of the year and are solitary for the remainder. Solitary queens found new colonies after they emerge from hibernation each spring, typically within a rodent burrow. Colonies grow from the eggs of the founding queen until they have 50-400 worker bees. Near the end of the year, the colony produces new queens which overwinter and restart the cycle.

Did you know fact: Franklin's Bumblebee was last observed in the wild in 2006.

IUCN Status: Critically Endangered.

Primary Source(s): US Fish and Wildlife Service Species Status Assessment.

Sunflower Sea Star (*Pycnopodia helianthoides*)

Sunflower Sea Stars are the largest species of sea star, with a diameter up to 32 inches and weighing up to 11lbs. They also have the most arms; up to 24! They are generalist predators of slow-moving, bottom dwelling marine animals, and important predators for maintaining the structure of coastal ecosystems. They have a remarkable ability to lose arms and regenerate, sometimes growing a whole-new sea star from a broken piece. Prior to 2013, Sunflower Sea Stars were common throughout their range in coastal waters of the Pacific Ocean from Alaska to Baja California. However, a novel disease called Sea Star Wasting Disease changed that, causing mass mortalities beginning in 2013. All populations of Sunflower Sea Star have been greatly reduced by Sea Star Wasting disease and the species has been lost from the southern third of its historic range, including most of California, within the last decade.

Size: Largest species of sea star. Up to 11 lbs with a 32-inch diameter

Diet: Primarily carnivorous feeding on slow-moving, bottom-dwelling marine animals such as mussels, sea urchins, and barnacles.

Habitat: Coastal waters of the Eastern Pacific Ocean from Alaska south to Baja California.

Behavior: When attacked by a predator, they can break off one or more arms which will grow back. If an arm is broken off along with part of the central disk, the broken piece can grow a whole new sea star.

Did you know fact: Sunflower Sea Stars were common prior to 2013, when a novel disease called Sea Star Wasting Disease began to cause mass mortality of sea stars, with Sunflower Sea Stars among the hardest hit. In the last decade, populations across the range have been severely reduced and the species may have been completely lost from the southern third of its range, including most of California.

IUCN Status: Critically endangered.

Primary Source(s): Animal Diversity Web and Hodin et al. 2021. *The Biological Bulletin*.

PLANTS

Bakersfield Cactus (*Opuntia treleasei*)

Bakersfield Cactus is an endangered species of prickly-pear or beaver-tail cactus that only occurs in the SE portion of the San Joaquin Valley in Kern County near Bakersfield. Bakersfield Cactus typically grows in sandy soils and forms clumps that can be 14-in high and up to 33 ft across. They produce large magenta flowers in the spring, typically May, which further develop into fruits the size of small eggs. Bakersfield Cactus can be distinguished from other beaver-tail cacti by having both bristles and spines coming from the eye-spots on their pads. The primary reason for their decline is habitat loss.

Size: Cactus clumps can be 14 inches high and 33ft across.

Habitat: Sandy soils in the south-eastern San Joaquin Valley (Kern county).

Flowering: Magenta flowers are produced in May.

Did you know fact: Unlike many other prickly-pear or beaver-tail cacti, Bakersfield Cactus have both spines and bristles coming from each spot on the cactus pad which is otherwise smooth.

IUCN Status: NA (California and US Endangered).

Primary Source(s): US Fish and Wildlife Service (FWS Focus).

California Jewelflower (*Caulanthus californicus*)

California Jewelflower is a small, annual herb endemic to (i.e. only found in) San Joaquin Desert habitat in the southern San Joaquin Valley. They have a 4-5 inch rosette of leaves at their base which produces a 4-20 inch long stem terminating in an inflorescence of maroon and white flowers. Flowering occurs from March-May. The majority of California Jewelflower's San Joaquin Desert habitat has been lost, and this plant is only known to exist at 34 small sites. However, their seeds can remain dormant for extended periods meaning additional, unidentified sites could still have viable seed present.

Size: Base has a rosette of leaves 4-5 inches in diameter. A primary stem emerges from this rosette that is 4-20-inches tall and terminates in a flower spike with multiple 0.5-inch long flowers.

Habitat: San Joaquin Desert habitat within the southern San Joaquin Valley.

Flowering: Produce an inflorescence of small (~0.5 inch) maroon and white flowers from March-May

Did you know fact: Only currently found at 34 sites in 5 California counties. However, seeds can remain dormant in the seed bank for long periods and only germinate when conditions are right, so viable seeds could be hiding at additional sites.

IUCN Status: NA (California and US Endangered).

Primary Source(s): California Department of Fish and Wildlife and Jepson Herbarium at UC Berkeley.

Whitebark Pine (*Pinus albicaulis*)

Whitebark Pine are endangered trees found in high-elevation habitats throughout western North America, typically occurring on steep, wind-swept slopes. In California, they occur in the high Sierra. They can be exceptionally long lived, with the oldest individuals over 1200 years old, and mature trees can be up to 66-ft tall. They are dependent on a bird, Clark's Nutcracker, for seed dispersal and germination. Clark's Nutcrackers collect seeds from Whitebark Pine cones and cache them in large quantities underground for later consumption. Any seeds that are not eaten can germinate and grow. Populations of Whitebark Pine are declining throughout their range due to the combined effects of multiple external pressures including an introduced fungal disease, infestation with mountain pine beetle, and overgrowth from historic fire suppression.

Size: Mature trees are 16-66 ft tall and extremely long lived with the oldest aged to over 1200y.

Habitat: Steep, wind-swept slopes in sub-alpine and alpine habitats throughout western North America. In California, they are found in the high Sierra.

Flowering: Like other pine trees, they do not produce flowers. Instead, they produce male and female cones. Female cones are 2-3-inches long and dark brown with hints of purple whereas male cones are much smaller, carry pollen, and are scarlet in color.

Did you know fact: Seed are distributed almost exclusively by Clark's Nutcracker birds, which are adapted to open the cones to collect the seeds. They then cache the seeds underground for later consumption, sometimes multiple miles from the mother tree. Uneaten seeds then germinate if conditions are favorable.

IUCN Status: Endangered.

Primary Source(s): USDA Plant Guide.