



A 3D Model set by Ken Gilliland

Nature's Wonders

Frogs

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Nature's Wonders

Frogs

Introduction

The name "frog" derives from the Old English word "*frogga*" which means "to jump". The use of the term "frog" in common names usually refers to species that are aquatic or semi-aquatic and have smooth, moist skins; the term "toad" generally refers to species that are terrestrial with dry, warty skins.

Frogs have been featured prominently in folklore, fairy tales, and popular culture. They tend to be portrayed as benign, ugly, and clumsy, but with hidden talents, such as turning into a Prince. Toads have a more sinister reputation. It was believed in European folklore that they were associated with witches as their familiar spirits and had magical powers. The toxic secretions from their skin were used in brewing evil potions and also in creating magical cures for human and livestock ailments.

There are approximately 4,740 species of frogs around the entire world. Frog populations have declined significantly since the 1950s, with more than one third of the species considered to be threatened with extinction and over one hundred and twenty believed to have become extinct since the 1980s.

Overview and Use

This set uses a common model to recreate digitally the Frog species included in this and future volumes. Each species uses specific morphs from the generic model to single-out its unique features.

- **Models included in this volume:**
 - **Natures Wonders Frog Base** - This model is used with all frogs included in this set. There are 3 versions of this model:
 - In the DAZ Studio version, the "Frog" character will work for 3Delight or Iray renders.
 - In the Poser version, there are two "Frog" characters. The "Frog" cr2 is intended for FireFly renders and the "Frog P11" is intended for SuperFly renders.

Creating a Specific Frog using Poser

1. For this example, we'll create the California Red-legged Frog.
2. Load Poser, select the FIGURES library and go to the Nature's Wonders Amphibians folder.
3. To create a California Red-legged Frog, use the "Nature's Wonders Frog" base model.

4. Go to the POSES library, then to the Nature's Wonders Amphibians/Frogs of the World folder and the Firefly or Superfly sub-folder.
5. Select the California Red-legged Frog (or a frog of your choice) and load/apply it to the Frog base model by clicking the mouse. This species pose contains both the morph and texture settings to turn the generic model into the selected frog.

Creating a Specific frog using DAZ Studio

1. For this example, we'll create the California Red-legged Frog.
2. Load DAZ Studio and go to the "Animals" "Nature's Wonders" "Amphibians" folder.
3. To create a California Red-legged Frog, use the "Nature's Wonders Frog" base model.
4. Go to the Nature's Wonders Amphibians/Frogs of the World folder and select the subfolder of which renderer you want to use, 3Delight or Iray.
5. Now select the California Red-legged Frog (or a frog of your choice) and load/apply it to the frog base model by clicking the mouse. This species pose contains both the morph and texture settings to turn the generic model into the selected frog.

Webbed Foot Issues

Creating large webs between the digits accurately depicts certain frog species, but it also created huge model rigging nightmares. A decision to rig individual digits instead of a webbed monolith portion was better for most species that this model supported, just not all. **The best practice is to gently bend those digits where webbing occurs in the same direction** (all positive or all negative).

The "Webbed Hands" and "Expand Hind Leg Webs" morphs can and probably will cause geometry distortions when bending limits are pushed. It is strongly suggested that you don't bend the second digits (eg. rGreatToe2, IPinky2) with these morphs.

Sizing & Poser Issues

All the frogs included in this set have been scaled to their appropriate sizes in relation to human figure models. In some cases, these frogs can be very, very small with the length no larger than a thumbnail.

The size of the frogs can produce some issues in Poser. The frog may disappear when the camera is in close focus. The "hither" setting on Poser's cameras is set to 0.800 by default. Reducing this setting to "0.0" will correct this issue.

A second issue can appear when rendering a small frog solely (without any other items in the scene). It will produce a default square shadow. It is a known bug with Poser. To correct this issue, include a second larger item off-screen and the shadows will render correctly.

California Red-legged Frog (*Rana draytonii*)

It became famous for being the frog featured in Mark Twain's short story, "[The Celebrated Jumping Frog of Calaveras County](#)". It also is the largest native frog in the western United States.

Range and Habitat: They are endemic to California, with a few sightings in Baja California. Historically, they could be seen throughout most of the California coastal areas; however, their population has dwindled. According to the U.S. Fish and Wildlife Service, California red-legged frogs are only found in 238 streams in 31 California counties.

They prefer slow-moving or standing deep ponds, pools and streams. Tall vegetation, like grasses, cattails and shrubs, provide protection from predators and the sun. They cannot tolerate excessive heat. When California red-legged frogs are not breeding, you might see them in wet meadows or damp grasses.

Identification (Measurements Snout to Vent): 2-5 inches (5.1-12.6 cm). The frog's



back and head can range from red to brown and/or gray. The back and top of the legs are covered in small black spots and large dark blotches. It has a reddish coloring on the underside of the legs and belly.

Typically, the face has a dark mask and a tan or light colored stripe above the jaw that extends to the shoulder.

The California red-legged frog has folds running down the side of its back, rough skin and partially webbed toes.

Call: Males communicate to females by a series of short, soft grunts--"*unh-unh-uh-uh-grr*" They will grunt several times then end the call with a growl.

Behavior and Reproduction: California red-legged frogs begin breeding around November and continue through April. The males arrive at the breeding grounds early and sit in groups calling to females. The females lay large egg masses and the

males fertilize the eggs. The eggs hatch and the larvae go through metamorphosis throughout the summer.

They are mainly solitary during the year and active at night. They do not like very hot temperatures and will seek shade within tall grasses and reeds. The main predators of California red-legged frogs are birds, raccoons, snakes and the invasive exotic American bullfrog.

Diet: Invertebrates, but on occasion, they will consume smaller amphibians and mammals.

Typical Lifespan: They can live upwards of 10 years in the wild; however, it is suspected that many do not live that long.

Status and Threats:

Threatened, the California red-legged frog is federally listed under the Endangered Species Act as a threatened species throughout its range in California.

In most locations the declining populations of California red-legged frogs is due to threats from more than one factor. These factors include degradation and loss of its habitat

through agriculture, urbanization, mining, overgrazing, recreation, timber harvesting, non-native plants, impoundments, water diversions, degraded water quality, use of pesticides and introduced predators. The reason for decline and degree of threats vary by geographic location.



European Common Frog (*Rana temporaria*)

Besides being known as the European Common Frog, it can also be called the European Common Brown Frog, or the European Grass Frog. It was the inspiration for the Brothers Grimm story, "[The Frog Prince](#)". A group of vocalizing frogs is called a 'choir'.

Range and Habitat: It is found throughout much of northern Eurasia as far north as Scandinavia and as far east as the Urals and Japan.

Outside of the breeding season, common frogs live a solitary life. They prefer damp places near ponds or marshes or in long grass. They are normally active for much of the year, only hibernating in the coldest months or in the most northern extremities of their range, where they may be trapped under ice for up to nine months of the year.

Recent studies have shown that in these conditions they may still be relatively active at temperatures close to freezing. In the British Isles, common frogs typically hibernate from late October to January. They will re-emerge as early as February if conditions are favorable, and



migrate to bodies of water such as garden ponds to spawn. Where conditions are harsher, such as in the Alps, they emerge as late as early June. Common frogs hibernate in running waters, muddy burrows, or in layers of decaying leaves and mud at the bottom of ponds. The oxygen uptake through the skin suffices to sustain the needs of the cold and motionless frogs during hibernation.

Identification (Measurements Snout to Vent): 2.4-3.5 inches (6-9 cm). Its back and flanks varying in color from olive green to gray-brown, brown, olive brown, gray,

yellowish and rufous. It can lighten and darken its skin to match its surroundings and during the mating season, the male common frog tends to turn grayish-blue. The flanks, limbs and backs are covered with irregular dark blotches and they usually sport a chevron-shaped spot on the back of their neck and a dark spot behind the eye. The eyes are brown with transparent horizontal pupils, and they have transparent inner eyelids to protect the eyes while underwater, as well as a 'mask' which covers the eyes and eardrums.

Males are distinguishable from females as they are smaller and have hard swellings, known as nuptial pads, on the first digits of the forelegs, used for gripping females during mating. Common frogs are often confused with the common toad (*Bufo bufo*), but frogs can easily be distinguished as they have longer legs, hop, and have a moist skin, whereas toads crawl and have a dry 'warty' skin.

Call: There are three distinct calls referred to as the A, B and C calls. In the case of the A call, the calling male frogs are stationary, but adjacent frogs are on the move. With the B call, all frogs are stationary. The C call is used when the calling frog is on the move. It is believed that the A and C calls prevent contact between males with the A call being defensive and the C call being aggressive.

Behavior and Reproduction: During the spring the frog's pituitary gland is stimulated by changes in external factors, such as rainfall, day length and temperature, to produce hormones which, in turn, stimulate the production of sex cells - eggs in the females and sperm in the male. The male's nuptial pad also swells and becomes more heavily pigmented. Common Frogs breed in shallow, still, fresh water such as ponds. Spawning can commence sometime between March and late June, but in the main part of their range it is generally in April. The adults congregate in the ponds, where the males compete for females. The courtship ritual involves noisy vocalization, known as "croaking", by large numbers of males. The females are attracted to the males that produce the loudest and longest calls and enter the water where the males mill around and try to grasp them with their front legs — although they may grasp anything of a similar size, such as a piece of wood. The successful male climbs on the back of the female and grasps her under the forelegs with his nuptial pads, in a position known as amplexus, and kicks away any other males that try to grasp her. He then stays attached in this position until she lays her eggs, which he fertilizes by spraying sperm over them as they are released from the female's cloaca. The courtship rituals are performed throughout the day and night but spawning typically takes place at night. The females lay between 1,000 and 2,000 eggs which float in

large clusters near the surface of the water. After mating the pairs separate, the females will leave the water and the males will try to find another mate. Within three or four days all the females will have laid their eggs and left the water and the males disperse.

Diet: Newly hatched tadpoles are mainly herbivorous, feeding on algae, detritus, plants and some small invertebrates, but they become fully carnivorous once their back legs develop, feeding on small water animals or even other tadpoles when food is scarce. Juvenile frogs feed on invertebrates both on land and in water but their feeding habits change significantly throughout their lives and older frogs will eat only on land. Adult Common Frogs will feed on any invertebrate of a suitable size, catching their prey on their long, sticky tongues, however they do not feed at all during their short breeding season. Preferred foods include insects (especially flies), snails, slugs and worms.

Typical Lifespan: They can live upwards of 14 years in the wild and 27 years in captivity.

Status and Threats: Not Threatened, however there is an overall decline in population due to degradation in their habitats, such as disturbance of breeding ponds, unusually hard freezes, and pollution by herbicides. These have all been known to wipe out the species in a region.

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Sources:

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