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A 3D Model set by Ken Gilliland

## Nature's Wonders

# Frogs of the World

## Volume I

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## Nature's Wonders

# Frogs

## Introduction

This first volume of Frogs of the World expands upon the base model set by including 6 species of frogs found across the globe.

The Northern and Southern Leopard Frogs will be familiar to most Americans, being among the most widespread frog species found in Canada, the United States and Mexico. The South American, Giant Monkey Frog, found in the Amazon Basin, is well-studied in bio-medicine for its secretions that fight infection and offer pain relief. The endangered Iberian Frog, found in Europe, is a cousin of the European Common Frog, which has much flashier markings. Rounding out the set is the Asian Rice Field Frog, which is found from India to Indochina, and the Australian Great Barred Frog of the Queensland and New South Wales regions.

The set comes in two versions; a Poser version that supports Firefly and Superfly rendering and a DAZ Studio version which supports 3Delight and Iray rendering.

## Overview and Use

The set is located within the **Animals : Nature's Wonder** folder. Here is where you will find a number of folders, such as **Manuals**, **Resources** and **Fauna Libraries**. Let's look at what is contained in these folders:

- **Fauna Libraries:** This folder holds the actual species and poses for the "premade" fauna. The fauna for this set can be found in the following folder(s):
  - **Amphibians/Frogs of the World**
- **Manuals:** Contains a link to the online manual for the set.
- **Props:** Contains any props that might be included in the set
- **Resources:** Items in this folder are for creating and customizing your fauna included in the set
  - **... Based Models:** This folder has the blank, untextured model(s) used in this set. These models are primarily for users who wish to experiment with poses or customize their own species. When using physical renderers such as Iray and Superfly, SubD should be turned to at least "3". For DAZ Studios 3Delight renders, the SubD must be turned from the "High Resolution" setting to the "Base" setting (otherwise some areas will render incorrectly transparent).

## Creating a Specific Frog using Poser

1. For this example, we'll create the Red-legged Frog.
2. Load Poser, select the FIGURES library and go to the "Animals", "Nature's Wonders" and then the Nature's Wonders Fauna Libraries Amphibians folder.
3. Go to the Frogs of the World folder and select the Firefly or Superfly sub-folder.
4. Select the Red-legged Frog (or a frog of your choice) and load it by clicking the mouse.

## Creating a Specific Frog using DAZ Studio

1. For this example, we'll create the Red-legged Frog.
2. Load DAZ Studio and go to the "Animals", "Nature's Wonders" and then the Nature's Wonders Fauna Libraries Amphibians folder.
3. Go to the Frogs of the World folder and select the Iray or 3Delight sub-folder.
4. Select the Red-legged Frog (or a frog of your choice) and load it by clicking the mouse.

## 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, lPinky2) 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.

## Rendering & Lighting Issues

The frogs will render perfectly in most conditions in Poser and DAZ Studio. With DAZ Studio, the materials were set-up and tuned in Uber Environmental lighting. Using other lighting systems (such as AoA lighting in 3Delight) made cause texture seams and require the adjustment (lessening) of bump, displacement and/or normal map values.

## Northern Leopard Frog (*Rana pipiens*)

*Northern leopard frogs are popular within the pet trade. It is the state amphibian of Minnesota and Vermont.*

**Range and Habitat:** North America; found in Canada and primarily the western and northeastern portions of the United States (Arizona, California, Colorado, Connecticut, District of Columbia, Iowa, Idaho, Illinois, Indiana, Kentucky, Massachusetts, Maryland, Maine, Michigan, Minnesota, Missouri, Montana, North Dakota, Nebraska, New Hampshire, New Mexico, Nevada, New York, Ohio, Oregon, Pennsylvania, Rhode Island, South Dakota, Texas, Utah, Vermont, Washington, Wisconsin, West Virginia and Wyoming).

They are found in permanent ponds, swamps, marshes, and slow-moving streams throughout forest, open, and urban areas.



### Identification (Measurements

**Snout to Vent):** 2-4.3 inches

(5-11 cm). A slim green or brownish frog. On its back it has dark round spots with pale borders. Its underside is white or cream colored. Spotting may be reduced or absent on the young. The species has well-defined, continuous dorsolateral folds, which are not angled inward. The upper jaw has a white stripe.

**Call:** The species has a snore-like call, interspersed with grunting and chuckling and lasting from 1 to 5 seconds. Choruses are a mixture of moaning, grunting, and chuckling. Individuals sometimes squawk when jumping into the water, and may scream if caught.

**Behavior and Reproduction:** It breeds from mid-March to early June. The egg clusters are typically firm and globular, and 2-6 inches in diameter. An egg cluster can contain up to about 6,500 eggs. They are usually attached to vegetation in the calm water of lakes, ponds, canals, and streams.

These frogs may venture far from the water into damp meadows. If frightened on land, they will rush toward the water in a zigzag pattern of jumps. Specimens are most easily spotted at night by the shine of their eyes.

**Diet:** Invertebrates, although they will occasionally consume smaller amphibians and mammals.

**Typical Lifespan:** They live 2 to 4 years in the wild.

**Status and Threats:** Least Concern (However their populations are dropping significantly). By the late 1980s, the lower 48 states had lost 53% of the wetlands that existed in the 1780s. Naturally, water-dependent species such as the Northern Leopard Frog have been negatively affected. In recent years the decline of this frog, in areas where it used to thrive, has also been attributed to infectious diseases, whose prevalence may be exacerbated by environmental stresses such as acidification. There have also been a number of reports in recent years on the widespread prevalence of limb deformities among many species of frogs, even those in seemingly pristine environments. The Northern Leopard Frog is one of the species most commonly reported to exhibit such deformities.

# Southern Leopard Frog (*Rana sphenocephala*)

*This species is considered the most abundant frog in Florida. It is often hunted for its legs.*

**Range and Habitat:** North America; found primarily east of the Mississippi River in the United States.

This frog lives in many types of shallow, freshwater habitat and sometimes in slightly brackish water. Usually it is found close to water, although it can stay on dry land for long periods of time.

**Identification (Measurements Snout to Vent):** 2-5 inches (5.1-13 cm). It is green or brown in color with a yellowish ridge along each side of the back, rounded dark spots on the back and sides and a light spot on each eardrum. The male has larger forelimbs than the female.

**Call:** The call is described as a "ratchetlike trill", "chuckling croak", or a "squeaky balloon-like sound".

**Behavior and Reproduction:** This frog is nocturnal. When adjacent to water and frightened, Southern Leopard Frogs will dive into the water make a sharp angled turn while submerged, then surface among vegetation away from the predator's gaze.



These frogs may nest communally. Their egg mass is connected to aquatic vegetation and the eggs hatch in 4 days to nearly two weeks. The tadpoles take 50 to 75 days to develop to adulthood.

**Diet:** Invertebrates, although occasionally they will consume smaller amphibians and mammals.

**Typical Lifespan:** Unknown

**Status and Threats:** Least Concern. This frog has shown some minor decline due to habitat destruction, as well as chemical and petroleum spills. But it has not exhibited the dramatic declines most other frog species have experienced.

# Great Barred Frog (*Mixophyes fasciolatus*)

*This frog can be kept as a pet in Australia with the appropriate permit.*

**Range and Habitat:** Australia; this frog is endemic to Australia, occurring from the Clarke Range in mid-eastern Queensland to Gosford in mid-eastern New South Wales.

The Great Barred Frog is almost always found near running water in forests and woodlands.

**Identification (Measurements Snout to Vent):** 3.2-4.3 inches (8-11 cm). It has a dark brown dorsal surface and a white ventral surface. The thighs are yellow/olive, blotched with black, and it has parallel black bars along the legs. A dark line begins at the snout, passes through the eye, goes over, then bends down behind the tympanum. Its feet are fully webbed and its hands completely unwebbed. Its eyes are on top of the head and the tympanum is visible.



**Call:** The mating call is a very loud "wark-wark-wark" which is occasionally followed by a softer, slow trill "bwaaark-bwaaark".

**Behavior and Reproduction:** Its powerful legs, and webbed feet allow it to escape predation by hopping large distances into water, and quickly swimming away.

The male and female Great Barred Frog will enter the water for amplexus. After laying the eggs, the female will flick them onto the bank for development. The eggs will then be washed into the stream or pond after the first rain, and hatch into tadpoles.

**Diet:** Invertebrates, although occasionally they will consume smaller amphibians and mammals.

**Typical Lifespan:** Unknown

**Status and Threats:** Least Concern. This species appears to be stable, having suffered no known decline within its range. Although there are no conservation methods in place specifically for this species, it is protected where it occurs in National Parks, such as Lamington National Park. Also it is often bred in captivity in Australian zoos.

## Rice Field Frog (*Fejervarya limnocharis*)

*This frog is also known as the Indian Rice Frog, the Indian Cricket Frog, Boie's Wart Frog and the Asian Grass Frog*

**Range and Habitat:** Asia; this is a widely distributed species of frog, extending from China and Southern Japan, throughout India, Sri Lanka, and Burma to the Malay Peninsula and Archipelago.

It is very common in paddy fields and wetlands.

**Identification (Measurements Snout to Vent):** 0.8-2.4 inches (2-6 cm). The snout of this frog is pointed, projecting beyond the mouth and there is a V-shaped dark mark between the eyes, On its dorsal

surface there are intermittent raised skin ridges. Its back is gray-brown or olive in color, sometimes suffused with bright carmine and it is common for there to be a yellow vertebral stripe. Its underside is white, and in the male the throat is mottled with brown. The lips and limbs are barred, there is a light line along its calf and the thighs are laterally yellow, marbled with black.

**Call:** The call is a characteristic "Ta, ta, ta, ta", repeated rapidly several times.

### Behavior and

**Reproduction:** Monsoon rains trigger the breeding season. It is one of the first amphibians to arrive at the calling sites. At these sites calling males are widely spaced from each other and generally stationed close to a stream of flowing water.

Eggs are medium sized and enclosed in a double jelly capsule. They are laid in batches and often adhere to grass blades.

**Diet:** Invertebrates, although occasionally they will consume smaller amphibians and mammals.

**Typical Lifespan:** Unknown.

**Status and Threats:** Least Concern. Frogs are harmed by pesticides and chemicals that are used on crops. Also birds, fish and snakes eat the adult frogs and tadpoles.



## Iberian Frog (*Rana iberica*)

*They are still common in the western part of their range, but to the east they become rarer and populations are fragmented. From the Sistema Central Mountains to the south they are considered endangered, as are some populations from the Basque Country.*

**Range and Habitat:** Europe; endemic to the Iberian Peninsula (Portugal and Spain).

Its natural habitats are rivers, mountain streams and swamps.

**Identification (Measurements Snout to Vent):** 2-2.8 inches (5-7 cm). The skin is smooth with fine granulations. The color is quite variable, being mainly olive, reddish

or grayish-brown, sometimes with darker markings. A dark streak runs between the nostril and the eye, and there is a thin, white line that marks the upper lip. The underside is pale, sometimes with darker spots, but the center of the throat is not spotted. The hind legs are sometimes barred with dark brown. The hind feet are more completely webbed than the common frog.



**Call:** The Iberian frog has a distinctive call, which is generally produced at night. It sounds like "rao-rao-rao" and is issued at a rate of about three calls per second

**Behavior and Reproduction:** It is an agile frog, that jumps into the water if disturbed and swims away rapidly.

Small clumps of eggs with a gelatinous coat are laid and stick to water weeds or are placed beneath underwater stones. When the tadpoles hatch, they feed on vegetable matter. After about three months they undergo metamorphosis, turning into juvenile frogs.

**Diet:** Beetles, flies, caddisflies, stoneflies, spiders, and harvestmen.

**Typical Lifespan:** Unknown

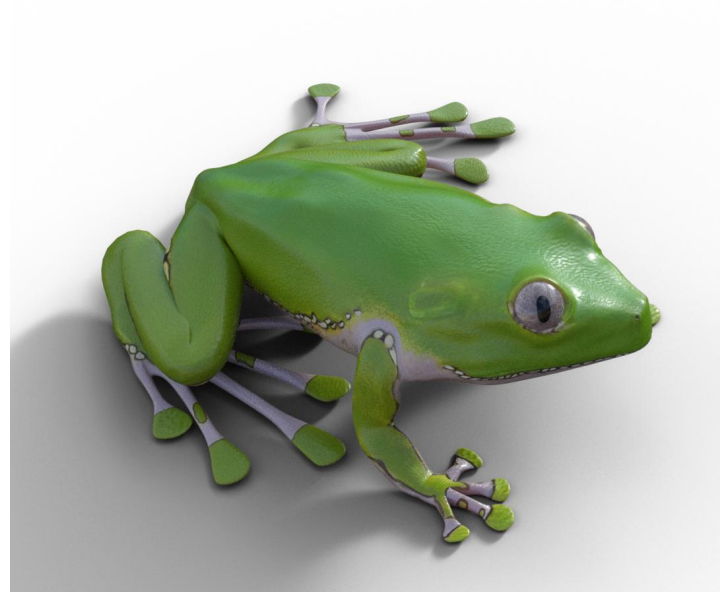
**Status and Threats:** Near Threatened. Parts of the range of the Iberian frog include two national parks, Parque Natural del Gorbea and Parque Natural de Izki, and in these it is protected, but in other places, especially in the Sistema Central Mountains and Extremadura in Spain, populations are shrinking. It is threatened by habitat loss through agriculture, deforestation, and the planting of non-native woodlands. Tourist development and recreational use of the land may also cause disturbances. Introduced fish species and the presence of American mink (*Neovison vison*), that escaped from fur farms, may also reduce their numbers.

# Giant Monkey Frog (*Phyllomedusa bicolor*)

*This frog is also called the Giant Waxy Monkey Tree Frog, Giant Leaf Frog, Blue-and-yellow Frog, Bicoloured tree-frog, Kambô and Sapo. The waxy secretions that the frog rubs over its body (the amphibian equivalent of using sunscreen lotion) contain hundreds of bio-active compounds that fight infection, and analgesics that provide pain relief*

**Range and Habitat:** Southern America; found in the Amazon Rain forest of northern Bolivia, western and northern Brazil, southeastern Colombia, eastern Peru, southern and eastern Venezuela, and the Guianas. Occasionally, it is also found in the riparian forest area of the Cerrado, a vast tropical savanna ecoregion of Brazil.

**Identification** (Measurements Snout to Vent): Males 3.6-4.1 inches (9.1-10.3 cm), Females 4.4-4.7 inches (11.1-11.9 cm). The dorsum is dark green whereas the belly is white to yellow-white or cream. Lower lips, chest and front legs bear sparse white spots with dark frames; these are more dense on the flanks and hind legs. Fingers are transparent brown and have large, green adhesive discs. There is a prominent gland extending from behind the eye over the tympanum. The iris is dark gray.



**Call:** It sounds similar to a deep growling bark.

**Behavior and Reproduction:** This is a nocturnal, arboreal frog. Males call from trees in tropical humid forests. Both the female and male construct a leaf-nest above forest pools. When the eggs hatch from these nests, the tadpoles fall into the water, where they continue their development into adult frogs. Peak reproduction occurs during the rainy season.

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

**Typical Lifespan:** Unknown.

**Status and Threats:** Least Concern. There have been recent dramatic drops in the populations due to them being harvested for bio-medical research.

## Special Thanks to:

.. to my beta tester, FlintHawk

...and to Charles Taylor for Poser Coding help and Szark for Iray Material help

## Sources:

- "300 Frogs: A Visual Reference to Frogs and Toads from Around the World" by Chris Mattison. Firefly Books Ltd, Buffalo, NY, 2007
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- US Fish and Wildlife Service <https://www.fws.gov>
- Wikipedia <http://wikipedia.org>

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