

# American Bullfrog (*Lithobates catesbeianus*)

## Description

The scientific name for the American Bullfrog is *lithobates catesbeianus*. *Lithobates* is the Greek genus name, derived from *litho-* (stone) and *bates* (one that treads), meaning one that treads on rock, or rock climber. *Catesbeianus* is the Latin species name in honor of Mark Catesby, an 18<sup>th</sup> century naturalist who first published an account of the flora and fauna of North America. The frog is also known as *Rana catesbeiana*.

The American Bullfrog is an amphibian (cold-blooded vertebrate) and a true frog. Bullfrogs are long-legged and distinguished by extensively webbed hind feet, horizontal pupils, and a bony breastbone. (Figure 1). True frogs occur on every continent except Antarctica and contain more than 600 species.

Bullfrogs hatch from eggs into a tadpole, a gill-breathing larval stage, (Figure 2) followed by a lung-breathing adult stage (Figure 1). The Bullfrog tadpole also breathes through its skin. As they become adults, Bullfrogs lose their gills and grow lungs, but still breathe through their skin both on land and in water. On the refuge, treefrogs, toads, salamanders and rough-skinned newts are the Bullfrog's closest relatives.

The American Bullfrog is an invasive species to Oregon, meaning that it is not native to Oregon. An invasive species often overwhelms the environment it spreads to, frequently causing great harm to the environment and native species.

Bullfrogs are the largest frog in North American and can reach a body length of 6 to 8 inches. Females are slightly larger than males, a feature common to many frogs. Bullfrogs can reach a weight of 1.7 pounds. Besides its size, a distinguishing feature of the Bullfrog is a broad, flat head and a large mouth. The adult bullfrog has long powerful back legs, measuring from seven to ten inches, and large, webbed feet, making it a very powerful swimmer and jumper.



Figure 2: Bullfrog Tadpole  
Lauren Sobkovlak, "Bullfrog Tadpole"  
06/04/2006  
Flickr, CC BY-NC-ND 4.0  
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beetles and other insects. They also eat fish, small turtles, young water birds, songbirds that venture too close, rodents, snakes, and even other bullfrogs. Bullfrogs typically swallow prey whole. Bullfrog tadpoles mostly graze on aquatic plants.

## Predation and Defense

American Bullfrog predators eat bullfrog eggs, tadpoles and adults. Predators include many of the same animals the Bullfrog preys on: aquatic insects, crayfish, fish, other bullfrogs, aquatic turtles, snakes, birds such as egrets and herons, and many carnivorous mammals, including humans.



Figure 1: American Bullfrog  
Jen Goellnitz, "A cousin of Kermit"  
08/01/2008  
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Coloration varies from light to dark shades of green or greenish brown, sometimes with dark spots on their backs and sides. Their underbelly is typically white with dappled gray, and the throat may be yellow. Bullfrogs have large eyes with irises colored golden brown or reddish bronze.

Similar to other frogs, Bullfrogs call by forcing air over their vocal chords and into vocal pouches on their lower jaw (Figure 3). Frogs have an inner ear and eardrum, just like people. A Bullfrog's eardrum, called the tympanum, is disk-shaped and located directly behind the eye (Figure 1). The tympanum shields the Bullfrog's inner ear. The tympanum of the male Bullfrog is larger than that of a female.

## Diet and Feeding Behavior

Adult American Bullfrogs are carnivores that eat "just about anything that passes in front of them." Their diet usually includes crayfish, snails, water

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Adult Bullfrogs' methods of protection include vocalizations, biting, jumping and swimming. They use a rapid, jarring, unpleasant sound to ward off danger from fellow frogs or other creatures. This call is different from their "invitation" call for mating, which has a deep, clear, melodic quality. They also use their large mouths and small teeth for defense. A Bullfrog sitting on a creek or pond bank can use its powerful legs to jump into the water when disturbed. They can then use their powerful legs and large flippers to quickly swim away from danger.

## Reproduction



Figure 3: Bullfrog Calling  
Rick Cameron, "Make a Joyful Noise (No. 1) 06/03/2012  
Flickr, CC BY-NC-ND 4.0  
<https://creativecommons.org/licenses/by-nc-nd/4.0/>

The American Bullfrog breeds from late May into July in ponds and slow-moving water. Male Bullfrogs sometimes gather into groups called choruses. A chorus will form and remain together for several days. This group behavior may enhance the call (Figure 3) of each frog to attract females. The males stake out egg-laying sites 10 to 20 feet apart and aggressively defend them from other males by chasing, wrestling and using threatening calls. Males engage in reproductive activities throughout the mating season.

After mating, females lay masses of up to 20,000 eggs in a film on the water's surface. The Bullfrog eggs hatch in four or five days (depending on temperature). Tadpoles remain in the ponds through that summer and the following winter, becoming young frogs in August or September of their second year (Figure 4).

## Distribution and Habitat

The Bullfrog is native to eastern North America. Its natural range extends from the Atlantic Coast to as far west as Oklahoma and Kansas. Bullfrogs live in warm, calm water sources such as ponds, rivers, or bogs.

People introduced the American Bullfrog to the Pacific Northwest during the Great Depression in the late 1920s or early 1930s to frog farms to provide food for people, with little success. Bullfrogs' big, meaty legs are high in protein and low in carbohydrates and fat. In the last 70 years, the Bullfrog has greatly expanded its range. The invasive Bullfrog is larger than native frogs such as the Pacific Treefrog and, in some areas, have displaced them.

## Conservation

Because the American Bullfrog is an invasive species to Oregon, the Oregon Department of Fish and Wildlife recommends, "If you see bullfrogs in the wild, remove them to eat or kill them. One accepted method is stunning the frog with a sharp blow to the head, followed by decapitation. Make sure you have first identified the frog as a bullfrog; most native frogs are protected and cannot be removed from the wild or killed."

While this is the recommended approach to bullfrogs from the ODFW, please do not remove or harm Bullfrogs on the Tualatin River National Wildlife Refuge. No animals, invasive or native, should be removed or harmed while on the refuge.

## Fun Facts

- Bullfrogs can lay up to 20,000 eggs each season, while Pacific Treefrogs will only lay from 5 to 70 eggs.
- What tadpole is that? Pacific Treefrog and Bullfrog tadpoles have internal gills, while newts and salamanders have external gills.
- Bullfrogs hibernate under water and take in oxygen from the water through their skin. While hibernating, their bodily processes slow dramatically and their body temperature drops to nearly match the outside temperature.



Figure 4: Bullfrog Froglet  
Jamie Cantrel, "Bullfrog froglet 08/24/2014  
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## Resources

1. Virginia Herpetological Society – American Bullfrog:  
[http://www.virginiaherpetologicalsociety.com/amphibians/frogsandtoads/american-bullfrog/american\\_bullfrog.php](http://www.virginiaherpetologicalsociety.com/amphibians/frogsandtoads/american-bullfrog/american_bullfrog.php)
2. Encyclopedia Britannica – Ranidae: <https://www.britannica.com/animal/Ranidae>
3. NatureMapping Program – American Bullfrog (introduced species):  
[http://naturemappingfoundation.org/natmap/facts/american\\_bullfrog\\_712.html](http://naturemappingfoundation.org/natmap/facts/american_bullfrog_712.html)
4. National Geographic Video – Bullfrogs Eat Everything:  
[https://video.nationalgeographic.com/video/frog\\_bull?source=relatedvideo](https://video.nationalgeographic.com/video/frog_bull?source=relatedvideo)
5. American Bullfrog – Lithobates (*Rana catesbeiana*): <http://www.aqua.org/explore/animals/american-bullfrog>
6. Living with Wildlife – Frogs: <https://wdfw.wa.gov/living/frogs.html>