

Xenopus laevis

African Clawed Frog

Species: *laevis*
Genus: *Xenopus*
Family: Pipidae
Order: Anura
Class: Amphibia
Phylum: Chordata
Kingdom: Animalia



Conditions for Ownership

Never purchase living specimens without having a disposition strategy in place.

- *Xenopus* frogs are restricted in the state of Ohio. In order to protect our environment, never release a live laboratory organism into the wild.
- Customers in certain states may be required to obtain an end-user permit from state agricultural agencies before we can ship *Xenopus* to you.

Primary Hazard Considerations

- Always wash your hands thoroughly after handling this organism.
- Precautions: Wearing gloves can help minimize the risk of spreading secretions from the amphibian's parotid gland. These secretions can be very irritating or painful if they are rubbed in human mucous glands, such as your eyes.

Availability

- *Xenopus* are lab-reared and are available year round, in all developmental stages.

How Will Animal Arrive and Immediate Requirements

- Tadpoles: Early and late stage tadpoles are shipped in deli containers with dechlorinated water.
- All of our adult frogs are shipped as one frog in a fish bag filled with water and oxygen. Adult frogs can be wild type (greenish/brown) or albino (creamy white). Adult frogs are about 7-12 cm in length.
- Adult *Xenopus* can live in their shipping container no longer than two days, due to build-up of wastes and depletion of oxygen. As soon as possible upon receipt, allow the frog to come to the same temperature as the water in which it will be placed.
- *Xenopus* tadpoles and eggs can be left in their deli container for a week or longer, as long as they do not become crowded, and water is changed regularly.
- If your *Xenopus* is cold when you receive it, its movement will be very slow or nonexistent. This does not indicate poor health; it will behave normally once it adjusts to a higher temperature. Once the frog has acclimated, carefully cut open the bag and release it into the aquarium.

Captive Care

Tadpole Habitat:

- Set up a clean aquarium with pond, spring, or de-chlorinated tap water (74° F). We recommend a minimum of 5 gallons for 12 tadpoles. Tap water can be de-chlorinated by letting it sit out for 48 hours or by adding a de-chlorinating solution such as [StressCoat](#).
- Make sure the habitat is away from direct sunlight and heaters.
- You may use large river rocks or pieces of smooth slate as substrate, and you can decorate the habitat with plants for hiding (live plants can serve as a natural food source).
- It is highly recommended that you gently aerate the habitat. You can aerate with a pump and air stone to improve oxygen and water circulation.

Tadpole Care:

- When feeding your tadpoles, be aware they will consume anything smaller than their mouth. Fish flakes and Tadpole pellets are recommended.
- Feed every day, but only as much as the tadpoles can consume in five minutes. Do not overfeed or the water will quickly become fouled.
- A partial water change is recommended three times a week if no aeration and once a week if aeration is present, even if the water does not appear cloudy. Remove about 15-25% of the waste-containing water and replace it with clean de-chlorinated water.

***Xenopus* Frog Habitat:**

- Set up a clean aquarium with pond, spring, or de-chlorinated tap water (70°F). We recommend a minimum of ten gallons for 2 sexually mature frogs or 12 young froglets.
- Make sure the habitat is away from direct sunlight and heaters.
- Do not use a gravel substrate that can be easily ingested. Use a medium sized rock or a piece of slate instead. Live plants will be uprooted.
- A secure screen top is recommended, as frogs like to jump. An air stone and filter are recommended, but not necessary.

***Xenopus* Frog Care:**

- *Xenopus* frogs will consume pellets, crickets, redworms and cut up earthworms. Make sure to feed the frogs a little at a time so they do not gorge themselves, which causes them to excrete large amounts of waste that, in turn, could cause death. Only feed each adult frog an amount that can be consumed within a few minutes.
- Feed no more than 3 times a week.
- A 30% water change should occur weekly in which the dirty water is replaced with clean water.

General Information

- Method of reproduction: Sexual. Egg laying can occur at all times of the year, but is common in spring. Breeding can take place up to 4 times a year. *Xenopus* reproduction mainly occurs during nighttime. They mate at night because they are nocturnal. Reproduction occurs more rapidly if the water temperature and water level are raised.
- Reproduction can be influenced by injections of commercially available Human Chorionic Gonadotropin (HCG), which is used in both male and female frogs to induce mating behavior. It increases ovulation in females which increases egg production.
- Determining sex: Males: When sexually mature, the frogs will have a black sticky nuptial pad on their forearms. Females: About twice as large as males; pear-shaped with visible papillae at the cloaca.



Life Cycle

- **Egg:** The eggs are very tiny, only about 2 mm in diameter. Development of the fertilized egg takes approximately 40 hours at 22°C and can be accelerated at temperatures as high as 30°C. Temperatures as low as 11°C will retard the development.
- **Tadpole:** Early stage *Xenopus* tadpoles have very little pigmentation and are almost clear in color except for the internal body parts, which appear dark. They are generally between 7 to 10 mm in length. Late stage tadpoles are between 10 to 15 mm in length and have started to grow hind legs, but still share the same characteristics as the early stage tadpoles.
- **Froglet:** Froglets have started their metamorphoses into frogs. Their heads have taken the shape of the adult frog and their limbs have grown. They reabsorb their tails into their abdomen. At this stage, the *Xenopus* have changed into their wild type (greenish-brown) color and are approximately 2 to 5 cm in length. They complete metamorphosis to frog within about 8 weeks of hatching.
- **Adult:** Frogs reach sexual maturity at about a year after hatching. Adult frogs are 5 cm to 12 cm and have been known to live up to 20 years in captivity.

Wild Habitat

- *Xenopus* is native to African grassland ponds, streams, and lakes in both arid and semi-arid climates. *Xenopus* are now found in many parts of the world with the appropriate climate and are considered to be an invasive species. *Xenopus* spend most of their time in the water and swim much more than they jump. They can become dormant in a mud burrow to survive a drought. In the wild, adults eat almost anything including insects, dead animals, worms, small fish, and *Xenopus* tadpoles. Tadpoles are filter feeders, and eat mostly algae.

Special Notes

- Do not overcrowd your *Xenopus* since adults do not hesitate to eat their own kind. Once your frogs are large enough to sex, you should isolate the males from the females. They have chameleon-like characteristics and can change body color (darkness) to adapt to their environment.

Disposition

- We do not recommend releasing any laboratory animal into the wild. As a laboratory animal, it has not encountered or learned wild survival skills and is therefore likely to come to an inhumane end.
- Adoption is the preferred disposition for a vertebrate.
- If the animal cannot be adopted by a capable owner, it may be surrendered to your local humane society.
- If the animal must be euthanized, we recommend consulting the AVMA guidelines on euthanasia (American Veterinary Medical Association, <https://www.avma.org/KB/Policies/Pages/Euthanasia-Guidelines.aspx>). According to these guidelines, acceptable methods of euthanasia for an amphibian include exposure to CO₂ at >60% or treatment with tricaine methane sulfonate (also known as TMS, MS-222 and [Biocalm](#)). TMS is an anesthetizing agent that will cause fish and amphibian death due to central nervous system depression and hypoxia with overexposure. Wear personal protective equipment (gloves, safety glasses, labcoat) while handling this substance. The fish or amphibian is placed in a solution of **5 g per 5 gallons** of water for **30 minutes** or until all motion has ceased. To make sure the animal is dead, check for reflexive movement when the eye is touched. If movement occurs, replace the animal in the TMS solution for another 30 minutes.
- A deceased specimen should be disposed of as soon as possible. Consult your school's recommended procedures for disposal. In general, a small dead vertebrate should be handled with gloves, wrapped in an absorbent material (e.g. newspaper), wrapped again in an opaque plastic bag, then placed inside an opaque plastic bag that is sealed (tied tightly) before being placed in a general garbage container away from students.