

Helping to Protect our Spring Peepers



River Des Peres; the straightening and man-made alteration with concrete sides affects the well-being of spring peepers



Frog eggs



Conservation Education Liaison Michael Dawson checks for spring peepers in a local pond

By Michael Dawson, Conservation Education Liaison

There is nothing more reassuring that spring is about to begin as when you hear the little bird-like peeps of the spring peeper calling at the end of February. Sadly, we are not hearing these little frogs calling from many of the places that we used to around the St. Louis area. This also includes the calls from many of its relatives, like the western chorus frog or the cricket frog.

Now, it is important to clarify that these species are in no way currently threatened with extinction in our state, and they can still be found throughout their ranges. However, this does not mean that they are in the clear. Many other previously abundant frog and toad populations have experienced dramatic population declines.

Based on a national study, there is an estimated 2 to 3% decline in frog and toad populations across the

Midwest, which began in the 1990s. Observations from local frog and toad community science projects indicate a possible absence or decrease of three members of the hylidae family (spring peepers, chorus frogs and cricket frogs) within the area of St. Louis. This area heavily correlates with the area inside of the Interstate 270 beltway that surrounds St. Louis City proper and its surrounding suburban communities. You can still find many of our other local frog species, such the bullfrogs, green frogs, southern leopard frogs and toads, within this area.

So, what is happening to these little native frogs of St. Louis? Why are spring peepers, chorus frogs and cricket frogs more affected by changes to their environment? Our Spring Peeper Program, part of the Saint Louis Zoo WildCare Institute, is working to answer these questions.

What We Know

Watersheds are essential for these little frogs. A watershed is an area of land where all the water that is under it, or drains off of it, collects into the same place (a river, for example). The St. Louis watersheds, which run through hundreds of urban neighborhoods, including the watershed where Forest Park and the Saint Louis Zoo reside, have a long and troubled history. Since the founding of St. Louis, many of our smaller creeks and rivers that make up these watersheds were channelized, straightened, partially buried (in the case of River Des Peres) and often



Spring peeper

used as sewers. This happened as the city continued to grow and to expand.

Many of the other remaining watershed areas were also developed or altered for urban use, including the process of channeling and draining areas with standing water. As urban development expanded, so did the need for recreational use of these watersheds. This led to the conversion or creation of local ponds and lakes into stocked-filled fish ponds for recreation. As more of the remaining open areas within these watersheds were developed, urban runoff containing excess salt, pesticides, herbicides and other man-made chemicals has also degraded many of our watersheds.

Because of these changes and alterations of our watersheds, the diversity of frogs and toads within these areas has decreased, especially many of the smaller species. These species play an important role in the local ecology as part of our aquatic food webs. For example, many of these small early breeding frogs produce thousands of tadpoles that are, in turn, a food source for many macro invertebrates and even other amphibian species such as salamander larvae. The larval stage (tadpoles) of these species also consume large amounts of algae, thus storing excess nutrients that could otherwise affect wetland ecology. As adults, these species also eat large volumes of insects and other small invertebrates.

Understanding the influence of landscape changes on animal populations is critical to inform biodiversity conservation efforts. A particularly important goal is to understand how urban density affects the persistence of animal populations through time, and how these impacts can be mediated. Declines in the diversity of our amphibian populations may be an early warning signal of pollution or ecosystem degradation.

Spring Peeper Program Goals

The goal of the Spring Peeper Program has three main directives:

- Identify and protect any remaining populations of the spring peepers, western chorus frogs and cricket frogs within the St. Louis metro area.
- Identify and study the urbanization causes for their decline in the St. Louis metro area.
- Increase St. Louis urban amphibian diversity by re-establishing viable and sustainable breeding populations of these species in the watersheds located within the Interstate 270 beltway.

What makes the Spring Peeper Program different from some of the Zoo's other conservation initiatives is that this project has the opportunity to focus our conservation efforts early in the process, before these species and their habitats decline to a non-reversible level.

Frogs and toads play an important role, serving as both prey and predator, in wetland ecosystems and are considered indicators of environmental health. It is essential that we understand the scope, geographic scale and cause of these declines before it is too late. ■

Zoo staff will survey areas shaded in green for spring peepers in 2021

