

Wood Frog

The Wood Frog (*Rana sylvatica*) is the official amphibian of Onondaga County, thanks to the effort of a group of students at Skaneateles High School. The Wood Frog is deserving of the recognition as the official amphibian of Onondaga County for a variety of reasons. The Wood Frog's ability to ride out our local seasonal weather changes shows that this amphibian is as robust as its human counterparts that reside alongside it.

Onondaga County has a healthy population of Wood Frogs, an indicator of the overall health of our local ecosystem. Wood Frogs can recognize their relatives and have provided a variety of research opportunities for science due to unique features of this local amphibian.

We are honored to have this unique ecological resident and in signing this Executive Order, County Executive J. Ryan McMahon II has established that the Wood Frog is the Official Amphibian of Onondaga County.



Photos by Michael Barnhart and Steve Chorvas

Wood Frog (*Rana sylvatica*)

Description: Orange to dark brown with dark "mask" from each eye to tympanum

Size: adult length is usually 1.5-3.0 inches

Eggs: >1,000 in a 2.5-4.0 inch diameter mass, often laid communally in "rafts"

(NYSDEC, 2018)

Onondaga County Directive

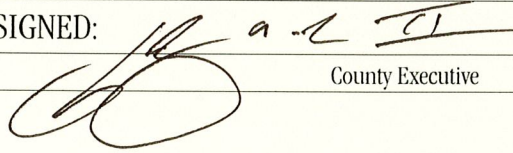
ADMINISTRATIVE DIRECTIVE MANUAL

SUBJECT: Declaring the Wood Frog to be the Official County Amphibian

SUPERCEDES:

PAGE:

SIGNED:



County Executive

DATE: 12/6/18

As Onondaga County Executive, I hereby name the Wood Frog as the Official Amphibian of the County of Onondaga.

Local students and community members have worked tirelessly to raise awareness of the many wonders of this species. The wood frog, for some time, has been the unofficial amphibian of New York State. This Directive formally bestows upon the wood frog the official County designation.

Uniquely suited to the cold climate, this small frog uses natural antifreeze to survive the harsh winters. This amazing creature actually freezes itself during winter, and reanimates with the spring thaw. Because of the wood frog's ability to raise its blood sugar levels to one hundred times its normal level, this unusual amphibian may prove to be a critical tool for medical researchers, particularly in the search for a cure for diabetes. Scientists have a keen interest in studying this tiny frog's ability to hibernate for several months as the temperatures drop below freezing, and its ability unthaw as temperatures rise. Studying the Wood Frog's freezing capabilities may lead researchers to a method for freezing transplants for long distance transportation.

The wood frog is the only amphibian possessing the ability to recognize its own family members. This frog's sensitivity to pollution makes the wood frog a superb indicator for the health of the ecosystem. They are travelers, known to show up as far as 1,200 meters from their birth place. The wood frog lives in New York, serving to inspire medical research and environmental study.

It is time to bring awareness to our community regarding the potential medical benefits and unique environmental properties of the wood frog. To that end, the Wood Frog is named the Official Amphibian of Onondaga County.

This directive is effective immediately on the date inscribed above.



Skaneateles High School

2018 National Blue Ribbon School

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Skaneateles, NY 13152

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Dear Executive McMahon,

Did you know that there is a species of frog in New York that sounds like a duck? If you don't know already, that species is the wood frog! This is a truly amazing animal, as you are about to learn, that our club has been trying to make the official New York state amphibian for 5 years. We are continuing our efforts this year, and we ask that you make the wood frog the official amphibian of Onondaga County in order to give our effort more attention.

First of all, there are several features that set the wood frog apart from other amphibians. For one, it can recognize its own family members. Scientists put different colored dye on wood frogs from different families, and the scientists noticed that frogs dyed the same color (siblings/parents) showed a preference for each other. Additionally, wood frogs are great indicators for ecosystem health because they are so sensitive to pollution. So if you see a wood frog in your yard, you're doing a good job of keeping it healthy! Wood frogs are also fond of traveling. Juvenile wood frogs have been known to travel distances as far as 1,200 meters from their birthplace. Lastly, there is a population of wood frogs in every county of New York State, making it the perfect state amphibian!

One of the most amazing things about the wood frog, however, is that it can literally freeze itself during the winter and reanimate come spring. It is the only amphibian species that has this ability (even though we humans feel like we are going to freeze in these brutal New York winters). In late fall, the frog starts to absorb water through its skin until it covers all of its internal organs. When it gets cold enough, the water freezes, and therefore, the frog "freezes". However, when spring comes, the water melts and the wood frog's organs miraculously return to their normal functions. This amazing adaptation really comes in handy, because wood frogs are one of only three species of frog that live above the Arctic Circle! Furthermore, the wood frog has one of the longest "activity periods" in North America. This means that it one of the last frogs to go into hibernation (freeze) in the fall and one of the earliest to "wake up" in the spring.

As if all this wasn't enough, the wood frog can also provide outstanding benefits to medical research. First of all, this frog can help researchers find the elusive cure for diabetes! A wood frog's blood sugar level rises to over 100 times its normal level when it freezes (a human would be in the hospital if their blood sugar rose to just 2-3 times its normal level). Research is being conducted on how the wood frog can survive unharmed from this huge rise in blood sugar level because it may be able to be applied to a cure for diabetes in humans. In addition, the wood frog is also being researched to benefit another field of medicine: transplants. Scientists have long been trying to figure out a way for organs to travel longer distances in order to meet the needs of more patients. If these researchers can find out how the wood frog can freeze all of its organs and survive, they may be able to freeze transplants so they can travel farther!



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However, we have listened over the years to various objections to the legislation, and one became paramount: Why exactly are we trying to make this frog the official New York State amphibian? Just for fun? Or is there another motivation? Many senators and assembly members asked us why the bill was worth their limited amount of time, and we realized that we had never really provided an adequate response.

The answer is that status as the official state amphibian of New York will bring awareness to the many useful aspects of the wood frog. More researchers will know about how the wood frog has the potential to cure diabetes and provide a way to freeze transplants to make them easier to transport from donor to patient. This will inspire more research on these topics. If you help to make the wood frog the official Onondaga county amphibian, this frog will garner the public attention it deserves. Another common objection we get is that the wood frog's status as official state amphibian would prevent building projects or other development in areas where the frog lives. However, these kinds of restrictions are usually only put into effect if a species is endangered. According to the IUCN Red List of Threatened Species website, the wood frog is in the category of "Least Concern". The article says the wood frog "is abundant and widespread, with a stable population" (IUCN SSC Amphibian Specialist Group 2015). This clearly shows that no special conservation efforts are needed for the wood frog. That means that it is very unlikely that any restrictions on building or development will be put in place in the near future.

In conclusion, the wood frog is a magnificent creature that is completely deserving of official state amphibian status for many reasons. It can freeze during the winter and come back to life when spring comes, help diabetes and transplant research, and lives in every county of New York State. We hope that you will make the wood frog the official amphibian of Onondaga County.

Sincerely,
The Wood Frog Club of Skaneateles, New York

Lili Winkelman- President

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