

Introduction

Welcome to the Juneau School District's

"It's not easy being green" **Amphibian Curriculum**

According to reports from old timers and long time residents, amphibians were once common in Southeast Alaska. Unfortunately, populations declined dramatically over the years. These declines are happening worldwide, and right here at home. And although most of us may never see amphibians around Juneau or other parts of Southeast, they are still worth learning about. They are fascinating creatures that utilize a variety of unique adaptations to make a living – amphibians are cold blooded, drink and breathe through their skin, and roll their eyeballs back into their heads to help them swallow food! They also undergo metamorphosis, changing from aquatic, fish-like creatures with gills to four legged land dwelling animals that breathe with lungs!

Amphibians also help humans in many ways – they secrete chemicals that some scientists turn into useful medicines, while others research how salamander limb regeneration might help people who have lost their limbs due to birth defects or accidents. Amphibians are bio-indicators – healthy amphibian populations indicate healthy environments for other plants and animals. They are the stuff of myths, legends and fairy tales from around the world, including right here, where amphibians have cultural significance to Native American people, especially the Tlingits of coastal Southeast Alaska.

Funded by grants from the Coastal Impact Assistance Program, Juneau School District, US Fish & Wildlife Service and Alaska Dept. of Fish & Game, this curriculum has been designed for students in grades 5 through 8, though it can easily be modified for other grades. It includes several science and language arts components, complete with background information and lesson plans to inspire, intrigue and motivate your students to explore the amazing world of amphibians. Lessons are keyed to the Juneau School District Core Content, Alaska State Content Standards, and National Science Education Standards. You will also find a list of resources including people, books and websites to help you discover more.

This curriculum would not have been possible without the generous support of Stephanie Hoag of the Juneau School District and the local teachers who volunteered time and energy to read various drafts, try out activities on their students, and offer helpful comments and suggestions. Neil Stichert of the US Fish & Wildlife Service generously provided copies of "The Amphibians and Reptiles of Alaska, A Field Handbook" by S.O. MacDonald, which is an invaluable teaching resource for the curriculum.

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Before we go, here are two **Big Ideas** biologists from all over Alaska and the “lower 48” urged us to communicate to you as teachers, students and amphibian enthusiasts:

1. Please do not collect eggs, tadpoles or adult amphibians from ponds, especially in the Juneau area, because there are so few active breeding ponds left.

In a recent study, biologists found toad eggs and tadpoles in only seven different areas along the Juneau road system. While other species of frogs have been found, their very small populations might not survive harvesting. Because naturalists and biologists suspect this to be true for many areas of Southeast Alaska, we urge you NOT to take native species of frogs and toads to your classroom. And although newts are more abundant, their skin contains an extremely toxic poison which can be fatal if ingested, making handling and care potentially hazardous.

If you are given a native amphibian by a well-meaning person, you will need a permit from the Alaska Department of Fish & Game, Division of Sport Fish to possess it for educational purposes.

2. Don't release any amphibians into the wild.

This is very important! Releasing classroom pets, even native species, can wreck havoc on wild populations by introducing harmful parasites or disease. Introduced species may also compete with native or resident species for food and other important resources. And finally, because some introduced species, like bullfrogs and African clawed frogs, eat anything they can find, they can destroy native populations of frogs, fish and other animals.

If you can no longer care for your classroom pet, consider doing one of the following:

- Give it to another responsible teacher, parent or school.
- Return it to the place of purchase.
- Donate it to your local natural history museum, science center, zoo or aquarium (not many of these in Alaska).
- Take it to the vet for humane euthanasia, a sad but sometimes necessary last resort.

Classroom pets can be amazing additions, but are also ongoing responsibilities. Please be sure your classroom can support an amphibian that may live many years in captivity.

We hope you have fun exploring the world of amphibians, and know that you'll learn a lot! Please feel free to share the curriculum and send us comments and ideas. And remember, it was Minnesota **middle school kids** who brought worldwide attention to amphibian declines! Like you, we believe students can be great observers and amazing scientists!